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THE
Inter-Allied Conference
on the
After-Care of Disabled Men

SECOND
ANNUAL MEETING

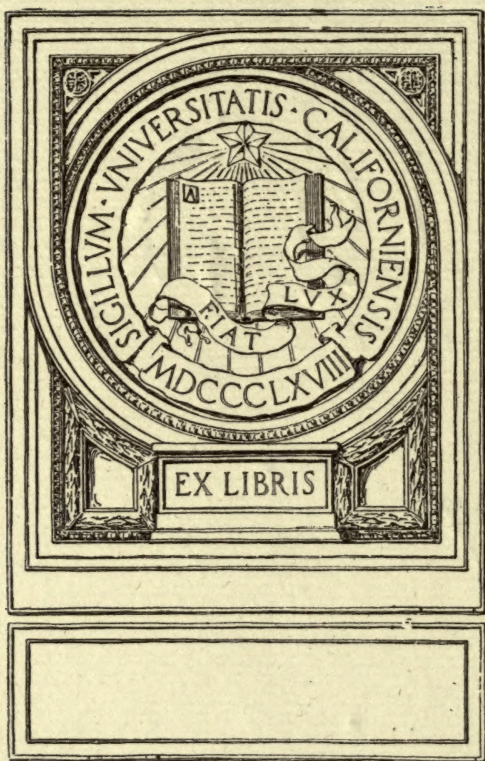
Held in London,
MAY 20th to 25th, 1918.

Reports Presented to the Conference.

LONDON:
PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE.

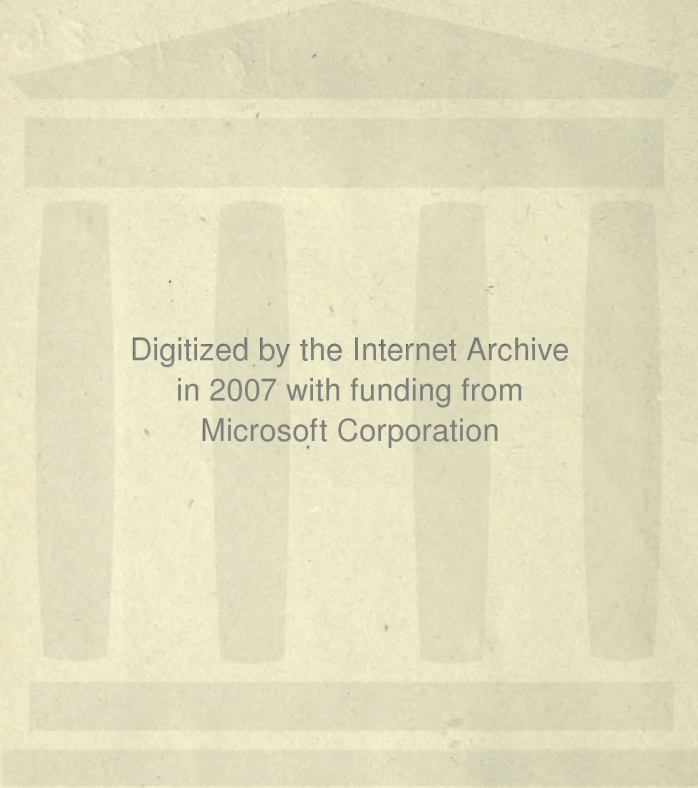
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OFFICIAL PROGRAMME FOR THE ALLIED CONFERENCE ON THE AFTER-CARE OF DISABLED MEN, MAY 20th TO 25th INCLUSIVE.

Monday, 20th May.

Delegates and guests to be in their places not later than 11.15 a.m. at the Central Hall, Westminster.

11.30 a.m. Opening ceremony by H.R.H. the Duke of Connaught.

12 noon. Opening of the Exhibition. Presentation of Delegates from Allied Foreign Nations.

12.30 p.m. Visit by Their Majesties the King and Queen.

2 to 8 p.m. Exhibition open to the Public.

2.30 to 7.30 p.m. Cinema Lectures by British and Allied Representatives. (For details, see List at entrance.)

Tuesday, 21st May.

10 a.m. to 12.45 p.m. Section Meetings. (For details, see Lists at entrance.)

10 a.m. to 8 p.m. Exhibition open to Public.

2.15 p.m. Visits to Roehampton, Richmond and Walton-on-Thames by Allied Delegates in three parties.

2.30 to 7.30 p.m. Cinema Lectures by British and Allied Representatives.

7.30 p.m. Dinner at the Mansion House to Allied Delegates.

Wednesday, 22nd May.

10 a.m. to 12.45 p.m. Section Meetings. (For details, see Lists at entrance.)

10 a.m. to 8 p.m. Exhibition open to Public.

2.15 p.m. Visits to St. Dunstan's (Blind) and Golders Green (Shell-Shock Recovery Home) by Allied Delegates in two parties.

2.30 to 7.30 p.m. Cinema Lectures by British and Allied Representatives.

Thursday, 23rd May.

10 a.m. to 12.45 p.m. Section Meetings. (For details, see Lists at entrance.)

10 a.m. to 8 p.m. Exhibition open to Public.

2.15 p.m. Visit to Shepherd's Bush and Battersea War Pensions Committee by Allied Delegates in two parties.

2.30 to 7.30 p.m. Cinema Lectures by British and Allied Representatives.

Friday, 24th May.

10 a.m. to 12.45 p.m. Section Meetings. (For details, see Lists at entrance.)

10 a.m. to 8 p.m. Exhibition open to Public.

12 noon. Final closing of the Conference by H.R.H. the Duke of Connaught.

2.30 to 7.30 p.m. Cinema Lectures by British and Allied Representatives.

Afternoon Entertainments to Allied Delegates by Sir William Younger.

7.15 p.m. Official Dinner to Allied Delegates at Ritz Hotel.

Saturday, 25th May.

Visit to Brighton by Allied Delegates, leaving Victoria about 10 a.m.

10 a.m. to 8 p.m. Exhibition open to Public.

2.30 to 7.30 p.m. Cinema Lectures by British and Allied Representatives.

E. A. STANTON, Lt.-Col.,
Secretary-General.

CORRECTED LIST OF DELEGATES.

BELGIUM.

Le Lt.-General MELIS.
M. Le Ministre BRUNET.
M. le Sénateur THIEBAULT.
M. le Sénateur LE CLEREG.
Le General DERUETTE.
M. le Docteur LE BRUN.
M. le Docteur WAFFELAERT.
M. le Docteur STASSEN.
M. ALLEMAN.
Major HAINAULT.

FRANCE.

M. le Depute METIN.
M. le Docteur LEFAS.
M. le Docteur BOURRILLON.
Mme. BARTHEZ.
M. VALLON.
M. CHARLES KRUG.
M. le Docteur CAUVY.
M. le Docteur NOVE-JOSSERAND.
M. le Docteur GOURDON.
M. le Docteur VILLARET.
M. le Docteur RIPERT.
Mme. la MARQUISE DE NOAILLES.

ITALY.

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Professor ENRICO BURCI.
Major Dr. GIOVANNI CELVI.
Professor GIOVANNI LORIGA.
Cavaliere PARDO.
Lt.-Col. Dr. GIACOMO POMA.
Lt.-Col. Comm. GENNARO LAGHEZZA.
Major GIOVANNI GIURIATI.
Paymaster ROBERTO SANDIFORD.
Lt. NERINO RASPONI.
Professor Lt.-Col. RICCARDO GALEAZZI.

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Surgeon-Major ANTONIO DE COSTA FERREIRO.
Surgeon-Captain JOSE PONTES.

SERBIA.

Colonel SUBOTITCH.
Miss DICKINSON.
Mr. LAZAR BOGUICEVITCH.
Dr. V. STOKITCH.
Dr. G. DJOURITCH.

SIAM.

WILLIAM ARCHER, Esq., C.M.G.
PHRA-SAN-PACKITCH PREECHA.

UNITED STATES.

Mr. P. B. KENNEDY will not attend.

Captain PHILIP WILSON, of the American Red Cross and of the United States Public Health Department, will be present.

Surgeon W. C. RUCKER, U.S. Public Health Service.

Mr. JEFFERSON CAFFREY.

Miss G. HARPER.

Major JOEL E. GOLDTHWAITE.

Mr. GEORGE E. VINCENT.

Mr. J. WHITE.

Professor SELSKRAM GUNN.

Mr. NORTON C. ADAMS.

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Colonel MURDOCK.

Lt.-Col. SPRINGTHORPE.

Surgeon-General FETHERSON.

Surgeon-General Sir NEVILLE HOWSE, V.C., K.C.B.

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Sir JOHN COLLIE, C.M.G., M.D., Director of Medical Service to the Ministry of Pensions, has, through a regretted inadvertence, not been correctly designated.

DELEGATES TO THE ALLIED CONFERENCE.

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- M. le Lt.-General MÉLIS, Inspector General of Belgian Military Medical Services ; President of the Belgian Delegation.
- M. le Sénateur THIEBAUT, Representative of the Ministry of War on the staff of the Military Institution for Maimed and Injured.
- M. le Général-Major DERUETTE, A.D.C. to the King of the Belgians ; Commandant of the Military Institution.
- M. le Dr. LEBRUN, Senior Medical Officer ; 2nd Class Director of the Military Institute of St. Adresse.
- M. le Dr. WAFFELAERT, Chief of the Surgical Service Hospital de Bonsecours at Rouen.
- M. le Dr. STASSEN, Regimental Medical Officer, and Chief Surgeon at Port-Villez.
- M. ALLEMAN, Chief of the Educational Staff, Port-Villez.
- M. le Major HAINAUT, Headquarter Staff, attached to Ministry of War.
- M. le Ministre BRUNET, Treasurer of Permanent Allied Committee ; Member of the Chamber.
- M. HENRI LE CLERCQ, Secretary to the Ministry of Interior.

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- Madame BARTHEZ, Member of the National Office.
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- M. le Médecin-Major de Première Classe JEANBRAU, Professor in University of Montpellier, attached to Service de Santé.
- Monsieur le Médecin Major NOVE-JOSSERAND, Chief of the Centre de Physithérapie, Lyons.
- Monsieur le Docteur GOURDON, Director of the Technical School for the Disabled at Bordeaux.
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 and Le Général MELIS (Chief of the Belgian Military Medical
 Service).

PREFATORY NOTE BY THE EDITOR.

BY JOHN GALSWORTHY, ESQ.

The Editor thinks that special acknowledgment is due to the speed and efficiency with which the printers have carried out their task under the great difficulties which at the present time beset such work. His thanks are due also to the many writers of papers who have taken great trouble to let him have their papers early, and to Professor Pardo, of the Italian Government Commission in London, for his energy in revising the translation of the many valuable papers received from Italy.

In order, however, to make certain that this volume should be completed in time for the Conference, it has been necessary to adhere strictly to the rule that no papers should be printed unless they were received type-written, and in the case of the two or three papers last received it has been impossible for the printers to submit proofs for correction. Moreover, in revising proofs containing technical terms of surgery or medicine it has not always been possible to secure correction by an expert hand, nor has it in the case of all such terms been possible to ensure uniformity of spelling.

The Editor trusts that the contributors of surgical and medical papers will not find their contributions to the Conference much disfigured from this cause. He hopes, too, that the contributors of papers written in, or translated into, French will forgive those slight disfigurements of their writings which the publication of them in this country, under the pressure of haste, has made almost inevitable.

The following papers have been grouped according to the Sections of the Conference at which they respectively seemed suitable for discussion; and in each group the papers are arranged in an order in which it is likely to be convenient to take them, so that in general papers dealing with the same subject may be found together. The results of this (or any other) classification will in some cases be arbitrary. Thus, for example, the reports sent by the Italian Government officially have been kept together under the Section dealing with Pensions and Allowances, though they cover a much wider ground. Again, a paper (on Operations on the Periphenic Nerves) placed at the end of the Section dealing with Surgical Treatment will be found to be closely related in subject to the papers on nerve cases which are classed under Medical Treatment.

FOREWORD.

BY JOHN GALSWORTHY, Esq.

The Angel of Peace, watching the slow folding back of this darkness, will look on an earth of cripples. The field of the world is strewn with half-living men. That loveliness which is the creation of the æsthetic human spirit; that flowering of directed energy which we know as civilisation; that manifold and mutual service which we call progress—all stand mutilated and faltering. As though, on a pilgrimage to the dreamed-of Mecca, water had failed, and by the wayside countless muffled forms sat waiting for rain; so will the long road of mankind look to-morrow.

In every township and village of our countries stricken heroes of the war will dwell for the next half-century. The figure of Youth must go one-footed, one-armed, blind of an eye, lesioned and stunned, in the home where it once danced. The half of a generation can never again step into the sunlight of full health and the priceless freedom of unharmed limbs.

So comes the sacred work.

For what Youth has done, for what it will yet do before the long gale blows away over sea and sky, shall not Youth be praised for ever? Can there be limit to the effort of gratitude? Niggardliness and delay in restoring all of life that can be given back is sin against the human spirit, a smear on the face of honour.

Love of country, which, like some little secret lamp, glows in every heart, hardly to be seen of our eyes when the world is at peace—love of the old, close things, the sights, sounds, scents we have known from birth; loyalty to our fathers' deeds and our fathers' hopes; the clutch and kiss of Motherland—this love sent our soldiers and sailors forth to the long endurance, to the doing of such deeds, and the bearing of so great and evil pain as can never be told. The countries for which they have dared and suffered have now to play their part.

I have seen those countries—nearly all—and something from each of special charm or wonder lingers yet in memory. Only the son of his country knows the hidden heart of her; but for the eager stranger other lands have faces and voices which tell him odd truths, show him grave beauties.

France! The country of the long romance! Who can see France and not love her—the land with the mysterious smile, with the clear thoughts and the gay, unconquerable, self-seeing spirit? France, the eternal type of Mother-country—she surely will not fail her sons who serve and suffer. Italy, whom the gods love, and chose, I think, for the land where Beauty should be embalmed for ever, so that man might look on it age after age and drink of inspiration—she will not forget to fill again the

lives of her wounded children with hope and usefulness. And the Little Country, trodden and ravished—none in the world had quite her teeming energy—she will be last of all to let the stricken go down their days drained of strength and interest.

And all our own far sister lands, having each her special flower of promise; having, all, the clear eyes and adventuring hearts of the young. To their pride of new race it will seem intolerable that their best and bravest should go starved of help and opportunity. Sooner would an Arab's hospitality fail than the freemasonry of the new worlds neglect their maimed heroes! And India, the wonder-land. She, too, will care for her children.

And this Britain of ours! Shall the work of restoration fail with us? Unthinkable! The draft will be honoured, the debt paid, so far as such a debt can be repaid.

America, too, I know, new as yet to this conflict and the wreckage thereof. Of that great, warm-hearted nation I prophesy deeds of restoration, most eager, most complete of all.

The conscience of to-day is burdened with a load well-nigh unbearable. Each hour of the sacred work unloads a little of this burden.

The Conference in Paris last year, and this Conference in London, were summoned that the countries who stand shoulder to shoulder in the fight may stand shoulder to shoulder also in the task of remedy, profiting by each other's success, avoiding each other's failures; that the whole field of recovery may be surveyed; the holy purpose of this crusade of healing be fortified in the hearts of all who serve; and a sign made manifest to the peoples of each country that the debt due is remembered. To lift up the man who has been stricken on the battlefield, restore him to the utmost of health and agility, give him an adequate pension, and re-equip him with an occupation suited to the forces left him—that is a process which does not cease till the sufferer fronts the future keen, hopeful and secure. And such restoration is at least as much a matter of spirit as of body. Consider what it means to fall suddenly out of full vigour into the dark certainty that you can never have full strength again, though you live on twenty, forty, sixty years. Though you have the soul of a hero, the flag of your courage may well be down half-mast! Apathy—that creeping nerve disease—is soon your bedfellow and the companion of your walks. A curtain has fallen before your vision; your eyes no longer range. The Russian "Nichevo"—the "what-does-it-matter?" mood—besets you. Fate seems to say to you: "Take the line of least resistance, friend—you are done for!" But the sacred work says to Fate: "Retro Satanas! This comrade of ours is not your puppet. He shall yet live as happy and as useful—if not as active—a life as he ever lived before. Do your worst; you shall not crush him! We shall tend him from clearing station to his last hospital better than wounded soldier has ever yet been tended. In special hospitals,

orthopædic, paraplegic, phthisic, neurasthenic, we shall give him back functional ability, solidity of nerve or lung. The flesh torn away, the lost sight, the broken ear-drum, the destroyed nerve, it is true, we cannot give back; but we shall so re-create and fortify the rest of him that he shall leave hospital ready for a new career. Then we shall teach him how to tread the road of it, so that he fits again into the national life, becomes once more a workman with pride in his work, a stake in the country, and the consciousness that, handicapped though he be, he runs the race level with his fellows, and is by that so much the better man than they. And beneath the feet of this new workman we shall put the firm plank of a pension."

The sacred work fights the creeping dejections which lie in wait for each soul and body, for the moment stricken and thrown. It says to Fate: "You shall not pass!"

And the greatest obstacle with which it meets is the very stoicism and nonchalance of the sufferer. To the Anglo-Saxon, especially, those precious qualities are dangerous. That horse, taken to the water, will too seldom drink. Indifference to the future has a certain loveability, but is hardly a virtue when it makes of its owner a weary drone, eking out a pension with odd jobs. The sacred work is vitally concerned to defeat this hand-to-mouth philosophy. Side by side in man, and especially in Anglo-Saxon, there live two creatures. One of them lies on his back and smokes; the other runs a race; now one, now the other, seems to be the whole man. The sacred work has for its end to keep the runner on his feet; to proclaim the nobility of running. A man will do for Mankind or for his Country what he will not do for himself; but Mankind marches on, and Countries live and grow, and need our services in peace no less than in war. Drums do not beat, the flags hang furled, in time of peace; but a quiet music is ever raising its call to service. He who in war has flung himself, without thought of self, on the bayonet and braved a hail of bullets often does not hear that quiet music. It is the business of the sacred work to quicken his ear to it. Of little use to man or nation would be the mere patching-up of bodies, so that, like a row of old gossips against a sunlit wall, our disabled might sit and weary out their days. If that were all we could do for them, gratitude is proven fraudulent, device bankrupt; and the future of our countries must drag with a lame foot.

It seems, to one who has watched, rather from outside, that restoration worthy of that word will only come if the minds of all engaged in the sacred work are always fixed on this central truth: "Body and spirit are inextricably conjoined; to heal the one without the other is impossible." If a man's mind, courage and interest be enlisted in the cause of his own salvation, healing goes on apace, the sufferer is remade. If not, no mere surgical wonders, no careful nursing, will avail to make a man of him again. Therefore I would say: "From the moment he enters hospital, look after his mind and his will; give them food;

nourish them in subtle ways, increase that nourishment as his strength increases. Give him interest in his future; light a star for him to fix his eyes on. So that, when he steps out of hospital, you shall not have to begin to train one who for months, perhaps years, has been living, mindless and will-less, the life of a half-dead creature."

That this is a hard task none who knows hospital life can doubt.

That it needs special qualities and special effort quite other than the average range of hospital devotion, is obvious. But it saves time in the end, and without it success is more than doubtful. The crucial period is the time spent in hospital; use that period to re-create not only body, but mind and will-power, and all shall come out right; neglect to use it thus, and the heart of many a sufferer, and of many a would-be healer, will break from sheer discouragement.

The sacred work is not departmental; it is one long organic process from the moment when a man is picked up from the field of battle to the moment when he is restored to the ranks of full civil life. Our eyes must not be fixed merely on this stressful present, but on the world as it will be ten years hence. I see that world gazing back, like a repentant drunkard at his own debauch, with a sort of horrified amazement and disgust. I see it impatient of any reminiscence of this hurricane; hastening desperately to recover what it enjoyed before life was wrecked and pillaged by these blasts of death. Hearts, which now swell with pity and gratitude when our maimed soldiers pass the streets, will, from sheer familiarity, and through natural shrinking from reminder, be dried to a stony indifference. "Let the dead past bury its dead" is a saying terribly true, and perhaps essential to the preservation of mankind. The world of ten years hence will shrug its shoulders if it sees maimed and *useless* men crawling the streets of its day, like winter flies on a window pane.

It is for the sacred work to see that there shall be no winter flies. A niche of usefulness and self-respect exists for every man, however handicapped; but that niche must be found for him. To carry the process of restoration to a point short of this is to leave the cathedral without spire.

Of the men and women who have this work in hand I have seen enough—in France and in my own country, at least—to know their worth, and the selfless idealism which animates them. Their devotion, courage, tenacity, and technical ability are beyond question or praise. I would only fear that in the hard struggle they experience to carry each day's work to its end, to perfect their own particular jobs, all so important and so difficult, vision of the whole fabric they are helping to raise must often be obscured. And I would venture to say: "Only by looking upon each separate disabled soldier as the complete fabric can you possibly keep that vision before your eyes. Only by revivifying in each separate disabled soldier the *will to live*, can you save him from the fate of merely continuing to exist."

There are wounded men, many, whose spirit is such that they will march in front of any effort made for their recovery. I well remember one of these—a Frenchman—nearly paralysed in both legs. All day long he would work at his “macramé,” and each morning, after treatment, would demand to try and stand. I can see his straining efforts now, his eyes like the eyes of a spirit; I can hear his daily words: “*Il me semble que j’ai un peu plus de force dans mes jambes ce matin, Monsieur!*” though, I fear, he never had. Men of such indomitable initiative, though not rare, are but a fraction. The great majority have rather the happy-go-lucky soul. For them it is only too easy to postpone self-help till sheer necessity drives, or till someone in whom they believe inspires them. The work of re-equipping these with initiative, with a new interest in life, with work which they can do, is one of infinite difficulty and complexity. Nevertheless, it must be done.

The Great Publics of our Countries do not yet, I think, see that they too have their part in the sacred work. So far they only seem to feel: “Here’s a wounded hero; let’s take him to the movies, and give him tea!” Instead of choking him with cheap kindness, each member of the public should seek to re-inspire the disabled man with the feeling that he is no more out of the main stream of life than they are themselves; and each, according to his or her private chances, should help him to find that special niche which he can best, most cheerfully, and most usefully fill in the long future.

The more we drown the disabled in tea and lip gratitude the more we unsteel his soul, and the harder we make it for him to win through, when, in the years to come, the wells of our tea and gratitude have dried up. We can do a much more real and helpful thing. I fear that there will soon be no one of us who has not some personal friend disabled. Let us regard that man as if he were ourselves; let us treat him as one who demands a full place in the ranks of working life, and try to find it for him.

In such ways alone will come a new freemasonry to rebuild this ruined temple of our day. The ground is rubbled with stones—fallen, and still falling. Each must be replaced; freshly shaped, cemented, and morticed in, that the whole may once more stand firm and fair. In good time, to a clearer sky than we are fortunate enough to look on, our Temple shall rise again. The birds shall not long build in its broken walls, nor lichens moss it. The winds shall not long play through these now jagged windows, nor the rain drift in, nor moonlight fill it with ghosts and shadows. To the glory of man we will stanchion, and raise and roof it anew.

Each comrade who for his Motherland has, for the moment, lost his future is a miniature of that shattered Temple.

To restore him, and with him the future of our countries, that is the sacred work.

INTER-ALLIED CONFERENCE

OF

DISCHARGED DISABLED SOLDIERS AND SAILORS,

London, May, 1918.

SECTION I.—PENSIONS AND ALLOWANCES.

Pensions in the United Kingdom.

BY LT.-COL. SIR A. GRIFFITH-BOSCAWEN, M.P.

(Parliamentary Secretary to the Ministry of Pensions).

The title Ministry of Pensions is, in a sense, a misnomer. It is too wide and also too narrow. It is too wide since we do not deal with all pensions. We have nothing to do with Old Age Pensions—we have nothing to do with Service Pensions, *i.e.*, pensions given for long service and good conduct in the Army or Navy—we have nothing to do with the pensions of Civil Servants of the Crown. The pensions we deal with are solely the disablement pensions of men who have suffered injury or impairment of health in the war, and the pensions given to the widows and dependants of those who have fallen. We also grant allowances for the children both of disabled men and of war widows. The title is too narrow, because we deal with much else besides pensions. The whole future of the disabled man comes under our purview. We are responsible for providing him with further medical and surgical treatment after discharge from the Services where necessary; for his re-education or training in a new trade where his disability unfits him to go back to his old occupation and for finding him employment—a duty which we share to some extent with the Ministry of Labour. We ought indeed to be described as the Ministry of the Discharged Disabled Man, or be known by some such title, if a convenient title of the kind could be found.

Treatment, Training and Employment will be dealt with in other sections of this Conference. I am going to deal in this paper simply with the matter of pensions. Here I should say at once that the Ministry is of recent origin. It is a war product. Disablement and Widows' Pensions were dealt with by three separate departments at the commencement of the war. All

Navy pensions were granted by the Admiralty. Men's disablement pensions were dealt with by the Commissioners of the Royal Hospital at Chelsea, who were, in a sense, a branch of the War Office. The pensions for officers of the Army, and widows' and dependants' pensions were dealt with by the War Office itself. It was only on February 15th of last year that the Ministry of Pensions took over these various duties.

At the commencement of the war the pensions granted were very small in amount and were generally considered to be quite inadequate. A private who had been totally disabled received from 10*s.* 6*d.* a week to 17*s.* 6*d.* a week, according to the length of his service. A partially disabled private received from 3*s.* 6*d.* to 10*s.* 6*d.* For the loss of a limb the maximum amount was generally given by the Chelsea Commissioners, viz., 10*s.* 6*d.* a week. Before the South African War the widows of those who had fallen received nothing at all from the State, though some provision was made in most cases out of the funds of the Royal Patriotic Fund Corporation. After the South African War widows' pensions were fixed at 5*s.* a week, but only in the case of the widows of men who had been married "on the strength." For children there was a flat rate of 1*s.* 6*d.* a week.

During the war a series of new warrants were brought out, both by the War Office and the Admiralty, which gradually improved the conditions. But these new warrants were unsatisfactory in many respects, and no carefully considered or co-ordinated scheme was in existence. Great dissatisfaction arose in the country at the manner in which the brave men broken in the war and the widows, children and dependants were being treated, with the result that Parliament decided to create a Pensions Ministry to deal specially with the question.

The Right Hon. G. N. Barnes, M.P., who is now a member of the War Cabinet, was appointed to be the First Minister of Pensions, and he at once set to work to bring out a new warrant for the Army and a new Order in Council for the Navy, granting pensions on a more liberal scale and codifying and co-ordinating the various warrants and enactments that had been in force up to date. The main features of Mr. Barnes' warrant are the following :—

I. The scales of pensions were generally raised, 27*s.* 6*d.* being fixed as the amount payable to a totally disabled man, total disablement being defined as :—

- Loss of two or more limbs.
- Loss of an arm and an eye.
- Loss of a leg and an eye.
- Loss of both hands or of all fingers and thumbs.
- Loss of both feet.
- Loss of a hand and a foot.
- Total loss of sight.
- Total paralysis.
- Lunacy.

Wounds, injuries or disease resulting in disabled man being permanently bedridden.

Wounds of or injuries to internal, thoracic or abdominal organs, involving total permanent disabling effects.

Wounds of or injuries to head or brain involving total permanent disabling effects or Jacksonian epilepsy.

Very severe facial disfigurement.

Advanced cases of incurable disease.

In the case of Non-Commissioned and Warrant Officers there are additions in accordance with rank. Partially disabled men are pensioned according to a descending scale corresponding with the degree of their disablement, the smallest pension given being 5s. 6d. a week, which is the rate for a man disabled 20 per cent., while for minor disablements of less than 20 per cent. gratuities are awarded. It will be seen from these figures what a great advance has been made upon the practice prevailing before and at the beginning of the war.

II. Children's allowances were raised to the following amounts in the case of the totally disabled man :—

5s. for the first child,

4s. 2d. for the second,

3s. 4d. for the third, and

2s. 6d. for each of the succeeding children.

By the new amending warrant which has just been brought out by the present Pensions Minister, the Right Hon. John Hodge, M.P., the children's allowances have been further increased to—

6s. 8d. for the first child,

5s. for the second,

4s. 2d. for each of the succeeding children.

The amounts paid for children in respect of partially disabled men correspond, like the pensions, with the degree of disablement.

III. To meet the case of men who were earning high wages before the war, and whose pecuniary sacrifice has, therefore, been great, another system was introduced, called the Alternative Pension. This is based on the man's ascertained pre-war earnings, his present earning capacity being taken into account. The effect of the provision is as follows :—A totally disabled man who was earning 50s. a week before the war can get in lieu of his ordinary disablement pension an alternative pension of 50s. a week; while if he were earning more than 50s. a week he can get that amount plus half the amount between 50s. and his total earnings up to a limit of 100s.—that is to say, a man who was earning 100s. a week before the war can get 50s. plus half the difference between 50s. and 100s., or, in other words, he can get as much as 75s. a week.

IV. The pensions just described are payable to men whose disablement has been the result of, or has been aggravated by,

military or naval service, and has not been the result of their own misconduct or serious negligence. Unfortunately, however, thousands of men were admitted into the Services who were unfit and ought not to have been so admitted, and have had to be discharged for disablements that were in no way due to service, and for such there is a system of gratuities or temporary allowances as a sort of compensation for the fact that they were taken away from their homes and passed into one of the Services. These gratuities may amount to as much as £150, and they average probably something like £30. The amounts vary in accordance with the length of service, the degree of disablement, and one or two other considerations.

V. Widows' pensions were also increased, and now they stand at half the amount that a man would receive if totally disabled, *i.e.*, 13s. 9d. a week, with the addition of children's allowances on the same scale as those given for the children of totally disabled men. The pension is increased to 15s. a week when the widow reaches the age of 45. The system of Alternative Pensions also applies in the case of widows, and under the Barnes Warrant they were fixed at half what a totally disabled man would get, the highest possible amount being, therefore, 37s. 6d.; but under Mr. Hodges' new warrant this has been increased to two-thirds of what the man could have got, or, in other words, the highest amount now is 50s. a week.

To meet the case of widows whose husbands came by their death not as the result of military service, there is a terminable pension of 15s. a week for the period of the war and twelve months afterwards, corresponding to the gratuities given to men disabled in non-attributable cases.

VI. Besides the widows of fallen men, there are also parents and other relations who may have been dependent upon them, and for these there is a system of dependants' pensions, based on pre-war enlistment, ranging from 15s. a week as a maximum to 3s. 6d. a week as a minimum.

On the assumption that all deceased soldiers and sailors would, had they lived, have supported their parents if in pecuniary need and incapable, by reason of infirmity or age, of self-support, pensions up to 15s. a week are given to parents in such circumstances.

VII. Very liberal provision has been made to enable disabled men to accept treatment and training where it is deemed necessary. It was found that many men required one or the other, but the temptation to go back to work temporarily and in consequence to impair health, or to accept blind-alley occupation at good wages for the moment, was so great that many men were unwilling to accept either treatment or training. It was, therefore, enacted that a man undergoing either, and thereby prevented from earning, should be paid an allowance for himself equal to the total disablement pension, *i.e.*, 27s. 6d. a week, and

that in addition to this the wife, if the man was compelled to live away from home, should receive a weekly sum equal to a widow's pension, *i.e.*, 13s. 9d. a week, and that the children's allowances should be paid. In addition to this, a bonus of 5s. a week, which is paid at the completion of the course, is given to men who receive training. These provisions have been very effective in making possible and popularising this very necessary re-education of the men, which has made great strides since the warrant was issued.

So much for the actual terms of the warrant. It will, however, be found in the experience of everybody that very nearly as much depends on the interpretation and administration of the warrant as on the terms of the warrant itself.

When the Ministry of Pensions took over the work from the various naval and military authorities we came to the conclusion that the administration of the previous warrants had been to some extent illiberal and niggardly, very strict rules having been made as to what constituted naval or military duty, and pensions being refused in all cases which did not conform to these rules. We decided that a broader and more liberal spirit must be introduced, with results which I think have been on the whole satisfactory. To give one or two examples. A man who met with an accident was refused pension under the old system unless he was actually on duty at the time, *i.e.*, on parade, or something of that sort. We have now decided that pensions shall be given in the case of all accidents occurring oversea, unless the man was himself seriously to blame; and as regards accidents at home, we give pensions, provided that they occur when a man is at, or about, the place where he ought to be and is not blameworthy. In the case of men on leave, we give a pension if he comes by an accident on the journey home or on the journey back, and similarly a man walking out from his camp or billet, and returning to his camp or billet, is pensioned. What happens to him while he is actually on leave, or out for the day, and not going out or returning, is a matter for him, and we are not responsible.

The question of whether a disability was attributable or not, or aggravated or not, always presents great difficulties, and our principle is to give the benefit of any reasonable doubt to the man and not to the State; but in view of the fact that mistakes are bound to be made by Medical Boards, and also by Awarding Officers, an Appeals Tribunal has been set up to which a man may apply for hearing as to whether his disability was due to service or not, and the Minister, as a general rule, accepts the decisions of the Appeals Tribunal. Another difficulty which had arisen under the old warrant was that it was the custom of Medical Boards to ask a man, when they were reviewing a pension, what he was earning, and the pensions were reduced if a man were earning high wages. This system, which had very bad results, by preventing men from going to work until their pension had been settled, has been abolished, and the degree of disablement on which the pension

depends is assessed now in accordance with the man's physical impairment or state of health and upon nothing else.

The plan whereby men receive their pensions was up to quite lately the following. An Army Medical Board decided that a man was no longer fit for service and should be discharged, and the discharge followed three weeks after this Board. During that time he remained on Army pay, and the Local Committee were notified that he was going to be discharged, opportunity being thereby given for the Local Committee to get into touch with him. At the end of the three weeks his pension was determined in accordance with the degree of his disability found by the invaliding Board. If delay occurred, which is bound to happen in a certain number of cases, owing to insufficient information, &c., the man received a temporary allowance until the pension was fixed, which amounted to 14*s.* a week. This sum was obviously inadequate, and it has now been raised to 27*s.* 6*d.* a week, with children's allowances. The three weeks' interval during which he remained on Army pay has been abolished, and he is discharged immediately after the Medical Board, receiving at the time coupons for his temporary allowance for four weeks. If his pension is not settled then, the temporary allowance continues until it is.

Pensions are of two kinds, permanent and temporary. A permanent pension is given in all cases where the disability has reached its final stage and where, therefore, no change for the better or for the worse is likely to take place, *e.g.*, in amputation cases or cases of blindness, and so forth. In other cases temporary pensions are given, which are renewable from time to time on the finding of Medical Boards, and which vary according to the degree of disablement found on each occasion. It is emphatically laid down in the warrant that no permanent pension once granted, unless, of course, granted in error, can be reduced, though it may be increased if the degree of disablement is increased. It is also laid down definitely that no man is to suffer in his pension on account of any improvement in his earning capacity caused by his learning a new trade.

Such in the main are the provisions made by the British Government for the gallant men who have fought for us and for the widows and dependants of those who have fallen. I do not claim that we have done all that is possible, but the figures I have quoted show what an immense advance has been made on our pre-war practice, and I think that I am entitled to say that we have made a large contribution both towards compensating them for their losses and also towards re-establishing them as useful citizens in the future.

In addition to these provisions, made by Mr. Barnes, for men serving in the ranks a new warrant, based on similar principles, was brought out by him for officers. Speaking generally, a second lieutenant's pension is about double that of a private, and for the higher ranks additions are made, just as is done in the case of warrant officers and non-commissioned officers.

In this paper I have dealt exclusively with pensions, and have said nothing about the work done by Local Committees in making advances to men pending the receipt of pensions or when waiting for treatment, &c., or in supplementing pensions in some cases. A paper will be read on the work of the Local Committees generally, and I will only say, on behalf of the Ministry, that their assistance has been most valuable, and that without them, with their local knowledge and sympathetic touch, pension administration would be well-nigh impossible.

LES PENSIONS EN FRANCE.

PAR M. ALEXANDRE LEFAS, Député d'Ille-et-Vilaine.

Les dispositions nouvelles édictées par le Gouvernement et par le Parlement français ont trait—

(1^o) à l'amélioration du régime des pensions de la Guerre et de la Marine.

(2^o) à la ré-éducation professionnelle des mutilés de la Guerre et aux soins ultérieurs que leur santé peut réclamer.

I.

Regime des Pensions.

Deux projets de loi ont été déposés par le Gouvernement. Le premier est relatif aux pensions des invalides de la guerre, des veuves et des orphelins, et, en certains cas, des ascendants dont les descendants ont été tués. Le second projet est relatif à la révision des pensions d'ancienneté pour les sous-officiers et les officiers de carrière, retraités avant la guerre, et qui ont repris du service.

Ce dernier projet est actuellement soumis à l'examen de la Commission des Pensions, de la Chambre des Députés. Le rapport de M. Le Brecq, député, sera prochainement déposé.

Le premier projet a été voté par la Chambre des Députés, sur le rapport de M. M. Pierre Masse et Lugol, députés. Il est actuellement soumis à l'examen de la Commission du Sénat, qui ne l'a pas encore voté. Le texte n'est donc pas encore définitif. Mais voici les grandes lignes de la réforme, exposées dans le discours prononcé par le Président de la Commission à la Chambre des Députés.*

(1^o) *En ce qui concerne les invalides de la guerre*, le projet de loi établit en principe que les blessures ou les maladies et les aggravations de maladies survenues à un homme qui est sous les drapeaux, sont considérées comme survenues par le fait ou à l'occasion du service militaire, si l'Etat ne prouve pas le contraire. Elles ouvrent droit à pension, si l'infirmité qui en résulte est définitive; et à gratification renouvelable tous les deux ans, si l'infirmité est sujette à guérison ou a aggravation. Les gratifications sont concédées et servies comme les pensions, au lieu d'être des secours gracieux du Ministre, comme elles l'étaient jusqu'à présent; mais elles peuvent être augmentées ou diminuées tous les deux ans, suivant l'état de l'intéressé.

Le taux de la pension du simple soldat ou marin variera de cent à mille cinq cents francs, suivant son degré d'invalidité.†

* Cf. discours de M. Alexandre Lefas, séance du 30 Novembre, 1917 Pour la discussion du projet, voir les séances de la Chambre des Députés.

† Jusqu'à présent le maximum de la pension du simple soldat n'était que de 975 Francs.

Un décret a réglé le mode d'évaluation de l'invalidité, d'après un barème médical, pour chaque blessure ou maladie. Le projet de loi indique (articles 6 et 7) comment sera évalué le degré d'infirmité, sur les bases du même barème, pour les invalides atteints de plusieurs blessures ou maladies. Dans ce dernier cas, la pension du simple soldat ou marin peut être portée jusqu'à un maximum de mille huit cents francs, pour certains cas particulièrement graves.

Pour les officiers, les taux de pension d'invalidité sont restés à peu près ce qu'ils étaient avant la guerre. Les taux des sous-officiers ont été relevés, puisque la pension du simple soldat est augmentée. Mais les relèvements proportionnellement les plus élevés sont ceux qui ont été faits en faveur des simples soldats ou marins (33 per cent. pour l'invalidité totale, et même 45 per cent. quand l'invalidité totale est accompagnée de certaines infirmités multiples).

Le projet de loi dispose également, qu'en outre de sa pension, l'invalidé recevra une majoration annuelle pour chaque enfant de moins de seize ans à sa charge. Cette majoration, proportionnelle au taux de l'invalidité, est de 10 francs par an pour une invalidité égale à 10 per cent., et de 150 francs pour une invalidité égale à 100 per cent. Les majorations d'enfant sont les mêmes, quel que soit le grade de l'invalidé. Elles cessent après le grade de chef de bataillon, conformément aux règlements français sur la solde, qui n'accordent d'indemnité pour les charges de famille que jusqu'à ce grade.

(2°) *En ce qui concerne les veuves des militaires ou marins morts* des suites de blessures ou de maladies survenues par le fait ou à l'occasion du service, elles reçoivent une pension qui varie suivant le grade du défunt, et suivant que la mort est due à une blessure ou à la maladie. Le minimum proposé par le projet de loi est de six cents francs pour les veuves de simples soldats ou marins.

Si le militaire est mort sous les drapeaux ou dans l'année qui suit son retour dans ses foyers, la mort est présumée avoir été causée par le service militaire, à moins que l'Etat ne prouve le contraire.

La veuve pensionnée qui a des enfants reçoit, en plus de sa pension, une majoration annuelle de 150 francs par enfant de moins de seize ans à sa charge.

Les articles 12 et 14 du projet de loi règlent les droits des veuves et des enfants, en cas de remariage de la veuve, ou quand le militaire décédé laisse des enfants de plusieurs lits.

(3°) *En ce qui concerne les orphelins*, ils héritent des droits que leur mère avait ou aurait eu : c'est-à-dire que la pension due à la veuve est servie à ses enfants, mais seulement jusqu'à ce que le dernier de ces orphelins ait atteint l'âge de 21 ans.

Les enfants naturels reconnus jouissent des mêmes droits que les enfants légitimes. (Articles 15 et 16 du projet de loi.)

(4°) *En ce qui concerne les ascendants*, dont le fils ou petit fils a été tué, et ne laisse pas de veuve ni d'orphelin, le projet de loi admet que les ascendants les plus proches comme degré pourront réclamer une pension alimentaire au Tribunal, s'ils sont infirmes ou âgés. Le taux de cette allocation ne varie pas suivant le grade. Il a été fixé par la Chambre à 200 francs pour un ascendant, à 400 francs pour deux ascendants, et par exception à 600 francs pour la mère veuve ou la grand'mère veuve.

En outre, pour les pères ou mères qui ont perdu plusieurs enfants, l'allocation est augmentée de 100 francs par enfant, à partir du second enfant décédé sous les drapeaux ; et elle peut leur être accordée par le Tribunal même si les enfants ont laissé des veuves ou des orphelins qui touchent une pension.

Le projet de loi règle encore, d'une part, la procédure des réclamations et des procès en matière de pension, et d'autre part, certaines situations spéciales, celle des mobilisés employés dans les usines ou bien aux travaux agricoles, celle des aliénés, celle du personnel du Service de Santé militaire, celle des militaires disparus et de leurs ayants cause ; les questions de cumul ou d'option entre les diverses allocations et pensions qui peuvent être dus par l'Etat à des titres divers, &c.

Il a été complété par divers projets, dispositions ou lois relatifs à la pension des marins du commerce, victimes d'événements de guerre ; aux soins donnés à l'éducation des enfants de militaires morts ou invalides, lesquels enfants sont adoptés comme Pupilles de la Nation ; à la réforme de l'institution ancienne dite " Hôtel des Invalides," &c.

Notons qu'en vertu des lois militaires, le pension ou la gratification due à un invalide est calculée uniquement en fonction de son invalidité et de son grade, sans tenir compte du gain qu'il peut encore se procurer par son travail ; ce qui est un encouragement pour lui à reprendre le travail.

De même, pour les veuves et les orphelins, la pension est indépendante des ressources qu'ils peuvent se procurer par ailleurs, et notamment par leur travail.

Cet ensemble de dispositions sera complété par une loi sur les pensions des victimes civiles de la guerre, et par la loi sur la réparation de dommages matériels de la guerre.

II.

Autres Mesures Legislatives.

(1°) La loi du 2 Avril, 1918, consacre l'institution d'un Office National des Mutilés et Réformés de la Guerre ayant la personnalité civile.

Cet Office constitue un organe de liaison entre les Administrations publiques et les Associations ou Œuvres privées qui s'occupent des militaires désignés à l'article 1°. Il a pour objet

de centraliser les informations concernant l'action des dites administrations, associations ou œuvres privées, d'encourager et de faciliter la réadaptation au travail des militaires susvisés; d'étudier les dispositions législatives et réglementaires susceptibles d'être prises en leur faveur et d'en suivre l'application, et, d'une manière générale, de leur assurer le patronage et l'appui permanents qui leur sont dus par la reconnaissance de la nation.

Il est rattaché au Ministère du Travail et de la Prévoyance Sociale.

Dans les départements, des Comités départementaux et des Comités locaux doivent fonctionner en liaison avec l'Office National.

La même loi institue une procédure pour les demandes formées par les mutilés qui désirent être ré-éduqués. Elle donne l'assurance que la pension ne sera point réduite du fait de la ré-éducation et que la famille du militaire en ré-éducation ne subira, de ce fait, aucun amoindrissement des sommes versées par l'Etat.

(2°) Plusieurs propositions de loi se rapportent aux soins qui, dans l'avenir, peuvent être dus aux invalides de la Guerre. La question est complexe pour certaines maladies, telles que l'aliénation mentale ou la tuberculose; le problème déborde le chapitre de la Guerre, et s'étend jusqu'au système général de prophylaxie adopté à l'égard de ces maladies.

Par ailleurs, il a été proposé que l'Etat prit à sa charge les soins médicaux et pharmaceutiques nécessités par la blessure ou par la maladie contractée au service. Mais on peut concevoir différentes façons de réaliser ce programme : soit par l'abonnement à des sociétés de secours mutuel, soit par l'inscription sur la liste de l'assistance médicale gratuite (qui jusqu'ici ne comprenait dans les communes que les personnes privées de ressources), soit par l'hospitalisation dans certains établissements dépendant de l'Etat ou de l'Hôtel des Invalides.

Ces diverses questions sont à l'étude.

(3°) *En ce qui concerne l'établissement des ré-éduqués ou leur placement*, une proposition de loi, votée par la Chambre sur le rapport de M. Bonnevey, et actuellement soumise au Sénat, sur le rapport de M. Strauss, a pour but de faciliter aux pensionnés et à leurs veuves l'acquisition et l'aménagement de petites propriétés rurales et d'habitations à bon marché. Les sociétés de crédit agricole et de crédit immobilier seront autorisées à leur prêter, à très faible intérêt, un capital dont le remboursement annuel est garanti par une hypothèque sur le fonds acheté, une assurance sur la vie de l'emprunteur, et, subsidiairement, pour les paiements annuels, par une faible partie des arrérages de la pension.

La Commission des Pensions de la Chambre des Députés étudie actuellement, sur le rapport de M. Lefas, une autre combinaison qui permettrait au pensionné de transformer une partie de sa

2°.—*Pensions de Veuves ou d'Orphelins. Armées de Terre et de Mer.*

Grades.						Taux excep- tionnel.	Taux normal.	Taux de réver- sion.
<i>Officiers.</i>								
Général de Division	...	Vice-Amiral	...			5,250	3,500	3,500
Général de Brigade	...	Contre-Amiral	...			4,000	2,667	2,667
Colonel	...	Capitaine de Vaisseau	...			3,000	2,000	2,000
Lieutenant-Colonel	...	Capitaine de Frégate	...			2,500	1,667	1,667
Chef de Bataillon	...	Capitaine de Corvette	...			2,000	1,400	1,333
	4ème échelon	Lieutenant de Vaisseau.	...			1,950	1,350	1,300
Capitaine	3ème échelon	"	"			1,850	1,300	1,233
	2ème échelon	"	"			1,750	1,250	1,167
	1er échelon	"	"			1,650	1,200	1,100
	4ème échelon	Enseigne de Vaisseau de 1ère Classe.	...			1,650	1,200	1,100
Lieutenant	3ème échelon	"	"			1,575	1,150	1,050
	2ème échelon	"	"			1,500	1,100	1,000
	1er échelon	"	"			1,425	1,050	950
Sous-Lieutenant	2ème échelon	Enseigne de Vaisseau de 2ème Classe.	...			1,400	1,000	933
	1er échelon	"	"			1,150	950	767
Aspirant de Marine	...	...	...	...	...	1,150	950	767
<i>Sous-Officiers et Soldats.</i>								
Adjudant-Chef	...	...	...	...	...	1,050	850	700
Adjudant	...	...	...	...	...	975	825	650
Aspirant	...	...	...	...	...	937	800	625
Sergent-Major	...	...	...	...	...	900	775	600
Sergent	...	...	...	...	...	825	700	550
Caporal	...	...	...	...	...	675	650	450
Soldat	...	...	...	...	...	600	600	375

OFFICIAL STATEMENT AS TO GOVERNMENT ACTION FOR THE ASSISTANCE AND PENSIONING OF DISABLED SOLDIERS AND SAILORS IN ITALY.

A.—Statement by Ministry of War.

Amongst the many problems unexpectedly sprung on us because of the war, that of disabled soldiers and sailors came immediately into prominence and claimed the entire attention and devotion of the nation and of the Government, not only on account of its deeply humanitarian aspect, but also because of its connection with social problems.

If, at first, the initiative of private individuals preceded the action of the Government as regards technical training in its most modern aspect, it was not long before the co-ordinating intervention of the State was apparent. If at the beginning the department of health of the Ministry of War was slow in changing from the old system of looking after the wounded to the more complete method of medical assistance for the disabled and crippled men, there was no further delay in organising the course of action to be followed by the authorities, and this time with appropriate legislation, setting forth clearly and concisely the regulations to be followed.

The measures taken may be considered under three headings :—(1) *Medical assistance for the disabled men.*—This comes after the recovery of the first wound, and its aim is to obtain all that can be obtained of the anatomical and organic recovery by the permanent diminishing of effects of disablement. (2) *Pensions and temporary allowances.*—Aiming at proportional compensation for the organic and working value that was lost as a result of the permanent effects of disablement. (3) *Social assistance.*—Aiming at the restoring of the working and earning capacity of the disabled man, through technical training and re-adaptation to work, re-employment, and any legal assistance that may give him protection and facilitate for him in every way possible his return to a normal existence.

The provisions detailed under the first two headings existed already. Of the first the terms were amplified, and its application was adopted with all the means of medical art and science. The second was based on more modern ideas, aiming at the reform of the pre-existing legal dispositions, and more especially at the revision of the list of disabling casualties. The third provision,

which at first was the result of the private initiative of the Local Committees for assistance by means of the technical training schools, was revised and completed and made law on March 25th, 1917, No. 481, thus instituting the "National Institution for the Assistance and Protection of Disabled Soldiers and Sailors."

Medical assistance to the disabled man.—This applies principally to the following four groups :—(1) Disablement caused by grave injury and maiming to the point of ultra-disablement; (2) blindness; (3) illness caused by neuro-organic and neuro-psychic wounds; (4) patients having received serious facial wounds.

Assistance to pre-disabled men and prophylaxis of disablement.—It may be said that the very first assistance given to disabled men begins with the organisation of the hospitals in the zone of war. This is done in such a guise that the wounded man is able to receive very quickly the appropriate and specialised surgical care that will safeguard him to the greatest extent possible from debilitating consequences, and thus diminish the necessity of amputations. This phase of the provisions consists in assistance given before disablement, and answering to a conception of the prophylaxis of crippling and disablement.

With this end in view, there are one or more specialised establishments with each Army Corps :—

1. Surgical hospitals for fractures and osteo-articular wounds;
2. Sections for ocular wounds;
3. Sections for nerve lesions;
4. Sections for stomatological and for facial wounds.

From these establishments, where the treatment is begun and continued until the patient can be moved without danger or too much discomfort, the men are taken to the health establishments in the interior, where the real treatment and assistance is initiated on the patient who has become, or is presumed to be, disabled.

We will briefly set forth a few details on the organisation of this assistance :—

Surgical centres for first concentration of disabled men.—Mantua, because of her central position on the Paduan plain, is the place of easiest access from the different sectors of the front, and here there has been established a surgical centre for first concentration, and consequent selection by districts. This establishment receives from the field hospitals the soldiers who have undergone serious amputations or are suffering from articular wounds, as a result of which it is to be presumed there will be permanent crippling.

Another centre for concentration has been instituted at Bari, with the same attributes, for the reception of the wounded arriving from the Balkan front.

From centres of first concentration the selection is made according to districts, it being considered not only just, but a duty, to

see that the cripples or mutilated men should go as near as possible to their native towns and their families, as it is foreseen that they will not return to active service.

To this district selection there are exceptions to be made for the *ultra-disabled*: these are the men who, on account of the great seriousness and number of wounds they have received, are not only unable to re-adapt themselves to any kind of profitable labour, but cannot even provide for themselves the necessities of life, those who for the future will be unable to move by themselves because of complete blindness, together with most serious and numerous injuries, with crippling wounds; big amputations or concomitant crippling.

These men are transported, provided they consent, to Florence, to the Hospital No. 6 of the Red Cross, preparatory to their further removal to the National Hospital for the Treatment and Residence of Incurables and Ultra-disabled Men. This institution is being got ready under the supervision of the National Institution, and will be installed in a vast and sumptuous villa surrounded by vineyards and woods, bathed in brilliant sunshine, enjoying the advantages of a benign climate.

Surgical sections for disabled men.—From the centre of first concentration of Mantua the disabled men are sent to those special institutions dedicated to surgical treatment that are situated in the neighbourhood of the patient's home.

These institutions are called sections of first concentration by district for surgical treatment, and are situated in the districts belonging to the Army Corps of Turin, Milan, Genoa, Bologna, Florence, Rome, Naples, and Palermo.

In these establishments the surgical treatment is completed, and, if needed, is still further perfected by means of new methods or of orthopædical surgery.

Physio-therapeutic section for disabled men.—From these sections, where the disabled men's treatment is begun, the patients are passed on to the section of second concentration, where, as a second step, the physico-orthopædical treatment is accomplished. This treatment results in getting the mutilated stumps into the best condition possible for fitting on the prothesis and for regaining the powers of movement. It is useful for reducing to a minimum the injuries in the case of serious amputations, and also to overcome or diminish the injuries to secondary and concomitant functions.

The section for physical orthopædic treatment is annexed to the section of surgical treatment, of which it is the complement; and for this reason it is situated in the same cities already mentioned as being the headquarters of surgical centres.

During this period of treatment the disabled men who have lost in the lower limbs are provided, as soon as possible, with apparatus of temporary prothesis—hospital prothesis (at first these are generally very simple apparatus in plaster, &c.)—

aiming at helping the action of the physical orthopædic treatment, and at minimising the harm done by too long a use of crutches.

For the making of these apparatus small workshops for temporary prothesis have been installed at the sections of second concentration.

From the time of the first concentration, whenever it is possible, and always during the second period, every effort is made to convince the disabled men of the possibility for them to become capable of again accomplishing profitable work; to this is added the care of attending to their psychological and moral re-education. During these periods they must frequently attend the courses of elementary instruction, and they are given small manual tasks, as a complement of their treatment, and as a start towards a general indication of the kind of technical training to which they will be best suited individually.

For this reason, in the second grade hospitals a few of the halls are dedicated to the use of laboratories and classes; these are run with the aid of the civilian committees that take an active interest in the work of technical training and after-care.

The physical orthopædic treatment having been completed, the disabled soldiers may be granted leave for not more than one month prior to their entering one of the technical training schools to which they have been assigned.

This leave is considered useful also with regard to obtaining a greater adaptability of the stump to the prothesis.

The men who are disabled through the loss of the lower limbs, when going on leave, are provided with a well-fitting but temporary prothesis—transition prothesis—which, for the disabled men with hip amputations, consists of the Paoletti type with metal splints that are adaptable, and can be reduced. In certain cases the transition prothesis, duly modified, may be used as a substitute, if necessary, for the definite prothesis.

The definite prothesis is applied at the technical training school, where the construction, fitting on and final application of the definite apparatus is accomplished. For this reason the laboratories that are authorised to make and supply these apparatus are connected with the professional training schools; or are within easy reach of them.

The prothesis.—The laboratories that are authorised to undertake the supply of prothesis belong to three different categories:—(1) Government laboratories; (2) district laboratories; (3) laboratories for the remounting, fitting and finishing processes of the apparatus for prothesis.

The Government laboratories, that are immovable and of national importance, are able not only to supply all the requirements of their own districts, but can also see to the supplying of all stamped or patterned raw material that is required by the district laboratories and the finishing laboratories.

These establishments are at present classified thus : Those belonging to the first category, *i.e.*, the Prothesis Laboratory of Milan and the Laboratory of the Rizzoli Institute at Bologna. Belonging to the second category there are the laboratories connected with the Professional Training Schools at Turin, Florence, Pescia, Rome, Naples, Palermo and Venice. To the third category belong the finishing laboratories connected with Technical Training Schools of lesser importance at Leghorn, Ancona, Bari, Voghera, Pisa, Modena, Perugia, Lecce, &c.

When the time comes for fitting the definite prothesis—this is only done during the disabled man's stay in the school, or at the end of his leave, on his return to the section of the second-grade hospital, if he be exempted from technical training—all the men that have lost a lower limb are supplied with a simple but well-fitting stump, non-articulated, to serve as prothesis in reserve should the definite apparatus get out of order. For those men who have lost both the lower limbs, instead, a second pair of artificial limbs is provided.

For those suffering from dislocation of the hip, and for those having undergone the hip amputation, of which the very short amputated stump is organically incapable of movement, and for which, therefore, the application of prothesis to the pelvis is required, instead of supplying them with the reserve stump that would not benefit in any way the statics of the body, a second apparatus of prothesis is supplied.

For foot amputation, an orthopædic shoe, fitted on for each individual, is supplied. From the plaster cast a wooden model is made and handed to the disabled man, who receives another orthopædic shoe to hold in reserve.

The apparatus of prothesis for the upper limbs must be so made that the hand can be replaced by plain metal mechanical engines to work with.

All the expenses of the initial supplies of apparatus for prothesis, whether provisional or definite, and of the wooden stumps for cripples, are defrayed by the military administration. The ensuing items of expense for repairs and exchange of apparatus for prothesis are charged to the National Institution; whilst the supply of apparatus for prothesis of a mechanical nature, to be used in guise of tools to work with, and supplementary to those provided by the military administration, is paid for by the Institutions and Technical Training Schools.

Local Committees have been appointed, and a Central Commission as well, for the control of the quality of materials used for the apparatus, and of the strict adherence to regulations with regard to their manufacture; these same bodies are empowered to decide on controversial questions, and to examine and investigate all the problems connected with anatomical and organic prothesis that are in a constant state of evolution.

The actual fitting of artificial limbs and of orthopædic and protective apparatus ends the task of giving treatment and medical assistance to maimed and crippled soldiers and sailors. The latter, without doubt, constitute the most numerous amongst the groups of disabled men that call for the assistance and care of the Ministry of War.

Assistance for the blind.—The blind are quickly removed from the ophthalmic wards in the field hospitals, and distributed amongst the three hospitals for concentration at Milan, Florence and Rome.

In these hospitals they receive the special treatment their cases call for, and are supplied with such ocular prothesis as are required, at the expense of the military administration; from these establishments the totally blind are transferred to the institutions for the care and training of the blind that have been recognised and approved by the Ministry of War.

It has been found best not to start the training of the blind too soon, before they are completely recovered from the wounds connected with the ocular lesions, and whilst they are still suffering from the results of the moral shock they have received. Therefore, the transfer is made when the blind soldier is morally and mentally in a condition to benefit thoroughly by the course of training, and is physically able to begin to work.

The institutions and schools for the blind that are officially recognised are those of Milan, Florence, Rome, Naples and Catania.

Following the principle adopted for the assistance of disabled men—that is to say, to take advantage during the long period of surgical treatment to give the patient a start in technical training, thus preparing him morally, and also obtaining the further advantage of getting better results during the actual period devoted to the real training in the three sections of concentration for the blind, everything is done to aid them morally and mentally whilst the surgical treatment is being carried on.

Assistance to disabled men with neuro-organic and neuro-psychic wounds.—In order also to obtain a quick transfer for the nervous cases, and to facilitate a rational selection, two centres for a first grouping of all the wounded arriving from the specialised sections at the front have been instituted at Bologna and Milan.

From these cities the patients are sent to the neurological territorial centres situated in the Cities of Pavia, Genoa, Milan, Siena, Rome, Ancona, Naples, Bari and Catania.

The said territorial centres are subdivided into two sections: The one for patients suffering from organic lesions of the nervous system (central and peripheric), the other for those suffering from neuro-psychic phenomena.

The psychic element holds such an important place in the development and treatment of purely organic ailments that the two sections are sharply divided from each other.

In the section devoted to the treatment of organic lesions of the nervous system, a specialist for such cases co-operates with the neuro-pathologist.

The cases of the incurably disabled men are promptly notified to the committees for moral assistance, technical training and re-employment, and the same lines are followed as for the serious osteo-articular maimed and crippled cases.

Assistance to men suffering from serious facial wounds and mutilations.—The soldiers suffering from serious facial mutilation are provided with special appliances, and eventually with provisional prothesis apparatus, and are transferred from the special sections in the war zone to the stomatoiatic territorial centres.

These are situated at Milan, Bologna and Rome. All cases must be reported to their respective Local Committee, when the consequences of their wounds are so serious as to deserve special consideration. It must always be remembered in such cases that grave disfigurement is not less deserving than other forms of disablement of the greatest measure of protection, aid and comfort.

Assistance for consumptive patients.—According to the law dealing with the assistance to disabled men, the patients suffering from incurable or lingering illnesses are considered as belonging to the disabled class, from both a physical and practical point of view. It is thus that, in observance of this principle, the assistance to consumptives was initiated; this was made all the more necessary that the question of tuberculosis has been sadly aggravated since the return of our prisoners of war, who left behind them, in the cruel Austrian concentration camps, their health and youth, coming back to us only too often inexorably tainted with this terrible malady.

The anti-tubercular fight was begun by the circular No. 801, of December 20th, 1916. In obedience to this document, in every territorial Army Corps, and at the base of every Army in the war zone, special sections for the diagnostic study of incipient or latent symptoms of this malady were created.

The first symptoms having been discovered in time at these diagnostic sections, that are under the management of specialists, the patients are promptly sent away from the ranks of the Army, and benefit by a whole series of dispositions and provisions especially drawn up with a view to receiving them, treating them and giving them anti-tubercular instruction.

Having set in motion the machinery for the exchange of tubercular prisoners of war with Austria, a medical centre for selection was established at Nervi. This is a big first-grade institution for the gathering together of the numerous tubercular patients that have been returned to us by the enemy, where the diagnosis

is made, and the degree of specific lesion ascertained before transferring the patients to other hospitals adapted to their case.

Contemporaneously with the institution of the Health Centre at Nervi, which can accommodate 1,200 patients, another centre for selection, of over 600 beds, was set up in the rear of the war zone to gather together and select the patients coming from the ranks of the Army.

The second sanitary centre for selection, organised on the same lines as the one at Nervi, was opened at Careggi, a locality not very far from Florence.

By both of these said centres, as in all the other diagnostic sections belonging to the various Army Corps, the patients are divided into three categories :—

- (1) Those affected by latent or barely initiated tuberculosis (first stage).
- (2) Those affected in a form of medium gravity (ulcerated form—second stage).
- (3) Those affected by galloping and rapidly fatal tuberculosis (third stage).

As soon as the condition of the men belonging to the last category is ascertained, they are received in special tubercular wards at the different hospitals where these same wards have been instituted in the territories belonging to the different Army Corps, in order to bring the poor victims as near as possible to the place of residence of their families.

The patients who are not so seriously ill are sent to appropriate sanatoria that have been instituted in each territorial Army Corps, where they are kept for about three months, and where, once this period passed, they are given their discharge. With their discharge, however, the assistance given to his class of disabled men does not cease. As a result of an agreement between the Ministries of War and of the Interior, all these patients are entitled to continue to receive all possible assistance, both medical and practical, unless they end by being recognised as disabled as a result of war service and, as such, entitled to all their pension rights.

The military administration has decided to grant, instead of the bonus, equal to a year's pension, that they used to pay now and again, to these sick men, an allowance of so much towards their treatment (assistance allowance) every time that the ex-soldier has to return to hospital during the three succeeding years after his discharge.

An equal sum is to be paid to each patient by the Ministry of the Interior, so as to total a daily sum equal to Lit. 5 per diem.

During the detention of the discharged soldier in the sanatorium, the respective families will receive a daily allowance equal to the separation allowance given to the families of the soldiers called up for military service.

With regard to the men who have a latent form of tuberculosis, they are sent to special sanatoria for treatment of initial tuberculosis (*climatic institutes*) generally under the direction of the Red Cross; of these, there are already three of some importance: Bergeggi, near Genoa; Fara Sabina, near Rome; and Milanino, near Massa Marittima; the patients can remain in these institutions up to six months entirely at the expense of the military administration. Once this period of treatment is over, this same administration reserves the right to have the patients re-examined at the diagnostic sections, where it had been decided to have them sent to these sanatoria, and where further decisions as to the care of the men are taken.

Temporarily disabled men.—One particular group of disabled men, the temporarily disabled, could not fail to interest the health authorities, and this for two reasons: (1) The lack of appropriate treatment, often irremediable, that exists in the ordinary hospitals, has often delayed the recovery of effects that were curable, and very often relatively unimportant, of wounds that, from a surgical point of view, are healed, and this often causes the definite effect of a disablement which, by its origin, and if well treated, could have been only temporary. (2) The need of regaining for the Army these temporarily disabled men as promptly and as completely as possible in the immediate interest of military efficiency.

For the treatment of temporarily disabled men there are the physio-therapeutical centres, one for each territorial army corps. These centres consist of a hospital and a physio-therapeutical depot. The physio-therapeutical hospital contains every means for diagnosis and for physical therapeutics, and a permanent medical Commission attends to the examination and prescribes the treatment.

The physio-therapeutical depots are a species of sanatorium that are a cross between the hospital and the barracks, where the men undergo special training in the form of medical-physiological gymnastics, according to a system of physio-psychic training of Professor Enrico Gualdi, that gradually, but also very rapidly, causes the men to regain to a maximum degree their organic vitality.

In order to have the complete programme of sanitary assistance, depending entirely from the Ministry of War, carried out under competent and technical management, Professor Commendatore Enrico Burci was chosen to superintend and direct the entire action taken by all concerned in the assistance to disabled soldiers and sailors. To this end he was made General-Inspector Surgeon.

B.—Statement by Ministry of Marine.

During the present war the Navy has had a very small number of wounded, both on account of there having been few and unimportant naval actions and because in sea warfare the proportion of dead to wounded is always great.

The larger part of the lightly wounded after a short period of treatment and rest rejoined the Royal Navy.

A small number, however—about one hundred—were permanently disabled, but without loss of limb, and were dismissed from the service and pensioned.

A few, in consequence of wounds or operations, suffered loss of limbs.

Their number, as appears from the statistics of all the naval hospitals, was, up to the end of February, 1918, about 70. All of them, after being treated in the naval hospitals, were sent either to orthopædical institutes for artificial limbs or to special training institutes.

The Navy, having had but few disabled men, has not created its own centres for the production of artificial limbs or for technical training, but sends disabled sailors to the institutes already in existence for this purpose in different cities of Italy.

For the fitting of orthopædical apparatus, the disabled sailors were sent to the following institutes: Orthopædical Institute of the Red Cross, in Spezia (Scuola Romiti); Orthopædic Institute Rizzoli, in Bologna; Orthopædical Institute Ravaschieri, in Naples. All the apparatus furnished by the aforesaid institutes, according to the statements of the naval hospitals, were a success both from the æsthetic and the functional point of view.

For treatment, the disabled sailors were sent to the following institutes: Istituto Rizzoli, in Bologna; Istituto Romiti, in Spezia; Istituto per cure fisiche, in Napoli; Istituto pro Mutilati, in Palermo; Clinica chirurgica di Firenze.

As a result of the treatment, many wounded sailors entirely recovered the use of their injured limbs and were able to return to the service.

The Naval Department worked with the other State Departments and helped in setting down the regulations for the operation of the Law of the 25th March, 1917, which brought into existence the National Institute for the Protection and Assistance of Disabled Soldiers and Sailors.

According to these regulations, disabled sailors may be employed, without passing any special examination, in the following vacancies under the Naval Department:—

Vacancies occurring in the Central Department, in the Royal Arsenal; as clerks in harbour masters' offices; assistants in Royal Arsenal magazines; messengers in the Central Administration; messengers in harbour masters' offices; lighthouses.

The Ministry of the Navy instructed all dependent offices to patronise the Institute for the Protection of Disabled Men. Special help was given to the development of the "Scuola Romiti," in Spezia. The Naval Red Cross, with the concurrence of other institutions, immediately after the outbreak of war, organised in Spezia a good surgical ward for the accommodation of 130 disabled men, with classes for general instruction, workshops and experimental grounds for agricultural work. The ward is supplied with a laboratory for the making of artificial limbs. The majority of the disabled sailors were sent to this institution to be fitted with artificial limbs for treatment, training, and employment.

Up to the present, 37 disabled men have been employed in the Naval Administration :—

Employment in the Central Department	...	3
Messengers	" " "	16
Clerks in the Royal Arsenals	... ..	8
Telephone operators	... ..	1
Ordinary workmen	... ..	8
Quartermasters' assistants	... ..	1

At present there are three applicants for a vacancy as clerk and one for general work in the Royal Arsenals.

Although the work done by the Royal Navy for its disabled men has been modest, it has helped in great measure to relieve the sufferings of these heroes and to enable them to earn their own living.

Nothing, in fact, has been neglected by any of the Naval Authorities in order to give disabled sailors the treatment necessary to restore them, as far as possible, to their former activities.

C.—Statement by Ministry of Pensions.

The medical assistance given to disabled soldiers and sailors, as set forth in the preceding pages, is completed and complemented by the military pensions, given out as compensation to disabled men for the permanent consequences of their disablement.

The entire question of the pensions was formerly under the complete control of the Ministry of War and of the Court of Accounts (*Corte dei Conti*). Whilst the former is still entrusted with questions relative to medical investigations, and to decisions connected with medical and legal control, the remaining sections of this department have been taken over by the newly constituted Ministry of Pensions and Military Assistance.

The texts of the law relating to military pensions (T.U. Pensions Laws, 21st February, 1895, No. 70—Law of 23rd June, 1912, No. 667) have been modified (Royal Decree, 8th August, 1915, No. 1266; Royal Decree, 12th November, 1916, No. 1598; Royal Decree, 20th May, 1917, No. 876), not only as regards the regulations that establish the amount due as pen-

sion according to the various kinds of disablement, but also with regard to the proceedings (provisions of current law) aiming at obtaining a quick and easy application of same law.

According to the regulations that formerly existed, the different degrees of disablement were classified in three separate categories only : such an arrangement was far from being in accord with the variety and extension of the subject. For each one of these categories, as was prescribed in the past, a stated amount used to be contributed as indemnity ; such an amount was by no means a just or proportionate value, and as a result either the soldier or the Government had to sustain serious financial loss.

According to the former regulations, it was understood that the title to pensions was limited to the men's unfitness for military service. This has been substituted for the larger conception of the men's greater or lesser fitness for the undertaking of lucrative labour.

The Government's intention is to compensate the individual for the diminishing of his powers for lucrative work, and proportionately to his physical disablement.

Consequently the different degrees of disablement for which pensions are now given have been subdivided into ten categories instead of only three as heretofore ; this is proving a much easier arrangement, and infinitely more in proportion to the exigencies of the different cases. For instance, disablements caused by blindness are divided into nine classes, starting from that of complete blindness, included in the first category, down to the diminishing of the binocular powers of vision, equal to between $\frac{1}{4}$ and $\frac{2}{3}$ of the normal, placed in the ninth category.

According to the first eight categories, the subject is entitled to a pension, whilst for the last two he receives a temporary allowance. The former refer to permanent disablement of a greater degree, which minimises the working power of the individual. The allowances are given to men suffering from lesser degrees of disablement, which cause a much smaller, if any, reduction of the individual's earning capacity.

In cases referring to a presumable modification or aggravation of the degree of disablement in so far as they may affect the men's working capacity, the decision stating the amount of pension to be paid can be twice revised within the period of five years.

The current regulations tend to facilitate in every way possible all the proceedings, which have been greatly simplified. The facts are submitted to only one medical board, and the interested party has seven days allowed him to consider their decision, either favourably or the reverse. Should he refuse to accept it, the matter is referred to a Commission of Appeal, which consists of one of the Directors of the Military Board of Health, of two Army and two civilian doctors, one of the latter being appointed by the National Association amongst the disabled men, the other by the Local Committee dependent from the Ministry of Pensions.

and of Military Assistance. In this manner both the interests of the soldier and of the Government are safeguarded.

A further modification has been brought with regard to ascertaining whether or not the injury is due to Service reasons. This has been greatly facilitated by the acceptance, as evidence, of the declaration of one of the hospital directors or of one of the commandants of the regimental dépôts.

So liberal an interpretation has now been given to the conception of Service reasons that the very fact of the man having been on duty is considered sufficient, and this has been of enormous importance with respect to disablement caused by illness (tuberculosis).

The maximum rate of pensions is allowed for disablements included in the first category (100 × 100). As for the disablements included in the other categories—from the second to the eighth inclusive—they are calculated proportionately at 80, 75, 70, 60, 50, 40 and 30 per cent. of the pensions allowed for the first category.

Whenever the degree and nature of his disablement cause the soldier to require the assistance of another person, he is entitled to a supplementary allowance over and above his pension.

The disablements belonging to the ninth and tenth categories call for a temporary allowance, instead of the pension for life. This allowance is equal to the amount of the pensions belonging to the eighth category, payable in one lump sum, and calculated for a period that varies from a minimum of six months to a maximum of six years.

ROLL OF SETTLEMENT OF PRIVILEGED WAR PENSIONS TO SOLDIERS AND SAILORS.

Grades according to equality Roll Law, 23rd June, 1912, No. 667, and resulting amendments.		Amount of pensions due for disablement categories given below.							
Royal Army.	Royal Navy.	I	II	III	IV	V	VI	VII	VIII
Aiutante di battaglia, maresciallo e maestro di arme.	Nocchiero di 1 ^a e 2 ^a classe, ed altri militari peraggiati a tale grado.	3,000	2,419	2,268	2,116	1,814	1,512	1,209	907
Furiere maggiore, furiere, sergente maggiore, brigadiere dei RR. carabinieri, sergente vice brigadiere dei RR. carabinieri.	Secondo nocchiero, ed altri militari pareggiati a tale grado.	2,240	1,792	1,680	1,568	1,344	1,120	896	672

Grades according to equality Roll Law, 23rd June, 1912, No. 667, and resulting amendments.		Amount of pensions due for disablement categories given below.							
Royal Army.	Royal Navy.	I	II	III	IV	V	VI	VII	VIII
Caporale maggiore appuntato dei R.R. carabinieri, caporale e carabiniere.	Sotto nocchiero, ed altri militari pareggiati a tale grado.	1,680	1,344	1,260	1,176	1,008	840	672	304
Appuntato, soldato e allievo carabiniere.	Marinaio scelto, marinaio e comune di 1 ^a e 2 ^a classe di altre categorie.	1,260	1,008	945	882	756	630	504	378
	Mozzo, comune di 3 ^a classe di altre categorie.	1,066	852	799	746	639	533	426	319

D.—Concluding Statement by Ministry of War. Social Assistance.

In addition to the first two measures for the protection and assistance of disabled men that we have indicated as coming within the province of the Ministry of War, we have further the various measures that constitute social assistance. These have been regulated and placed, according to their order of procedure, by the Law of March 25th, 1917, No. 481, that created the "Opera Nazionale" (National Institution), for the protection and assistance of disabled soldiers and sailors.

The National Institution has been entrusted with the task of attending to the social assistance of disabled men. This consists in superintending their general and technical training preferably with a view to their returning to their old work as agricultural labourers or as artisans; to have them trained in a new branch of work, in harmony with their social condition, their capacities and their economical situation, as well as with the conditions and resources of labour to be found in the locality where they intend to reside; to provide for their re-employment, to their eventual material assistance, to the resultant medical orthopaedic assistance, and to protect and safeguard their interests in all that concerns the application of the laws enacted in their favour.

The headquarters of the National Institution superintends its own work as it is accomplished by the Local Committees. These are institutions and associations that aim at protecting, training and assisting the disabled men. The action of said Local Committees is directed, completed and co-ordinated by the National Institution at headquarters; when necessary this same institution obtains from the competent authorities the granting of such measures as they consider essential. At the present moment there are Local Committees in a number of cities, where they see to the management of the technical school for the maimed and crippled or for the blind. These schools are in Milan,

Palermo, Turin, Bologna, Rome, Florence, Naples, Pescia, Vedona, Modena, Genoa, Pisa, Leghorn, Ancona, &c.; besides these, there are two big schools in process of formation—one in Bari and the other in Sardinia.

All the maimed and the crippled that have completed their treatment, and have attained the degree of organic recovery which assures them the regaining of their working capacities to as great an extent as is possible, are started on their training by being admitted into the schools. Through these schools all the disabled men must pass, even if it be but for a period of fifteen days, with, however, just a few stated exceptional cases. The principle of compulsion with respect to training is sketched into this brief compulsory period in order to stimulate by actual proof and practical example those that are doubtful or distrustful.

When the blind, the deaf, the mute, the neuropathics, &c., have ceased to need hospital care and treatment they are transferred to the institutions that are more especially indicated for their own particular form of disablement, or to institutions of convalescence and of work where their organic and technical training is seen to.

The advantages that are obtained from this training, as with all the other legal advantages that are favourable to disabled men, do not in any way imply any modification or change with regard to the pensions, whatever result this training may have, or whatever employment they may eventually undertake. This is most clearly stated in Art. 19 of the law.

Should their disablement not prevent them from being useful in the opinion of the military authorities, the disabled men are allowed to remain in the Army.

They are also re-admitted to their employments in public and Government offices held by them at the time of their being called up for this war. The text of the regulations specify the categories of employment for which, in spite of the existing laws, the Government may make exceptions in favour of the disabled men by admitting them without the competitive examinations. The fact of being a disabled man constitutes a title of precedence in all questions of equality as to merit and capacity in the competitive grading for admission to public offices. Exceptions can also be made, when necessary, in the interest of the disabled men with regard to the age limit established for the nominations to admission for competitive examinations.

For the concessions of gratuitous posts or of scholarships that are not destined to benefit any stated families, preference is given to the disabled men and, on the same terms with the other competitors, to their children.

As far as is applicable, the legal privileges obtained for war orphans are extended to the children of disabled men.

The disabled men who are pensioned are entitled to receive from all the financial institutions special facilitations for rates of

interest and of redemption, for modality and limit of credit, for the acquisition of farming or grazing land, of country property, or for the acquisition or building of a settlement, or workmen's house, giving as guarantee for the payment of the interest or of the redemption, the pension received by them.

All land, country or city property thus acquired or built, cannot be sequestrated, and is inalienable.

The disabled men's pensions can also be used for bond in the obtaining of an employment in a public administration where such a guarantee is required.

It is finally stated that all accident insurance taken out in connection with the work of disabled men, re-employed in any kind of factory, is compulsorily assumed by the insurance institutions, and that in the employment of the disabled men, as element for the valuation of the risk against which the insurance is required, this would become necessary only if their number exceeds a certain limit.

The insurance institutions are forbidden to demand an extra premium in individual cases for the insuring of artisans already disabled as a result of the war.

The proportional increase of the rate of premiums is only allowed when the number of disabled men employed in the industrial establishment or by the firm insured should be in excess of one-tenth of the total number of employees or workmen.

The rules and the limitations for the application of an increase of premium must be decided by means of a Decree of the Ministry of Industry, Commerce and Labour, in respect to all the institutions with the exception of the "Cassa Nazionale d'Assicurazione per gli Infortuni degli operai sul lavoro" (National Insurance Institution for Accidents to Workmen when at work). This latter institution, in valuing the biggest risk to the causes for the application of the increase of premium must keep within the limits and observe the rules stated in Article 13 of their own rules concerning premiums and indemnities, as approved by Royal Decree, No. 612, 15th April, 1915.

In order to ensure the most exact and rigorous observance of the regulations mentioned above, the heads or foremen of firms, industries or constructions who employ disabled men must not fail to declare the employment of each one to the insurance institution in signing the contract, or within three days of their employment if employed whilst the policy is still valid.

The Assistance to Disabled Soldiers and Sailors is a vast and complicated task which the Italian Government has undertaken. It is due not only to an elevated sentiment of human compassion, but is also dictated by a sense of duty and of wise social prevision. No financial burden, no matter how heavy, in the way of economical consequences will ever appear too heavy to the nation, who feel that they can never fully repay the debt of profound gratitude that is due to the heroic soldiers and sailors.

PENSIONS ET ALLOCATIONS AUX MUTILES ET INVALIDES DE LA GUERRE.

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Les circonstances spéciales nées de cette guerre, ont ouvert, aux législateurs, des horizons nouveaux sur le licenciement par réforme des soldats mutilés et invalides.

Les dispositions anciennes basées sur des infirmités-types justifiant la réforme et l'octroi d'une pension, furent bientôt trouvées insuffisantes, en présence de la variété et de l'inattendu des infirmités et affections consécutives aux fatigues et dangers de la campagne. Tour à tour, les gouvernements des pays belligérants votèrent, sous la pression des événements, de nouvelles lois qui pour la plupart furent étudiées et rédigées dans un véritable esprit d'équité et de justice sociales :—

I.—Dispositions Nouvelles sur le Licenciement par Réforme.

Des militaires belges mutilés et invalides de la Guerre.

Le Gouvernement Belge par l'Arrêté-Loi du 5 Avril, 1917, a lui aussi modifié le régime des pensions en vigueur avant la guerre et les principales innovations qu'il a introduites, dans la législation belge, se caractérise comme suit :—

(1^o) Pour ceux des soldats réformés dont l'intérêt l'exige, l'arrêté-loi du 5 Avril, 1917, consacre l'obligation du placement ou du maintien à l'Institut National Belge des Mutilés, des Invalides et Orphelins de la Guerre ou dans un autre Etablissement de Ré-éducation Professionnelle ou Fonctionnelle.

Cette nécessité a été imposée par l'exil. La plupart des soldats blessés ou invalides belges, se trouvent, en effet, isolés de leur famille restée en territoire envahi et laissés à eux-mêmes en pays étranger avec une indemnité forcément modique, ils pourraient avoir peine à pourvoir à leur subsistance et à trouver les soins que réclame leur santé.

(2^o) Autrefois les pensions étaient basées sur des forfaits, des infirmités-types auxquelles toutes les autres affections étaient rattachées par voie d'équivalence; désormais l'indemnité sera rigoureusement proportionnée au degré de l'incapacité de travail.

(3^o) L'indemnité pourra être accordée dès que la durée probable de l'affection sera d'au moins un an : les dispositions anciennes, au contraire, exigeaient l'incurabilité pour que le droit fût ouvert à la pension.

(4^o) Pour les infirmités contractées en service et ne provenant pas du fait du service ni de causes dépendantes de la volonté des intéressés, la pension de réforme prévue par la loi du 27 Mai, 1840, n'était allouée qu'aux militaires ayant servi le nombre d'années exigé par les lois sur le recrutement de l'armée, c.-à-d. aux militaires de carrière.

A ceux qui ne remplissaient pas cette condition, l'arrêté-royal du 13 Juin, 1912, No. 1095, ne permettait d'accorder qu'une indemnité non renouvelable. Désormais, chaque fois que les circonstances l'indiqueront, une indemnité renouvelable pourra être octroyée aux hommes de cette dernière catégorie.

L'article 3 de l'arrêté-loi du 20 Mars, 1917, dit : " Pendant la durée de la guerre, les indemnités de rémunération ou de logement sont maintenues aux familles des militaires licenciés par réforme."

Quand cette disposition aura cessé de sortir ses effets, il appartiendra au législateur de rechercher s'il n'y a pas lieu d'accorder aux invalides certaines majorations de pensions proportionnées au nombre d'enfants se trouvant à leur charge.

Dans la pensée du gouvernement belge, la portée de l'arrêté-loi du 5 Avril, 1917, est ainsi nettement limitée—d'une part, il ne vise que les blessures, infirmités et maladies, causées ou aggravées pendant la présente guerre et d'autre part, toutes les indemnités qu'il prévoit, prendront fin dès que, la Belgique étant délivrée et l'heure des grandes réparations ayant sonné, une loi règlera définitivement les pensions militaires dérivant de cette guerre.

II.—Bases d'une loi définitive sur le licenciement par réforme.

L'arrêté-loi du 5 Avril, 1917, est donc une loi provisoire, mais il contient cependant, en principe, les meilleures bases sur lesquelles devrait être fondée la loi définitive sur les pensions de réforme.

(1^o) Indemnité proportionnée à l'incapacité de travail.

(2^o) Indemnités de rémunération ou de logement maintenues à la famille des militaires licenciés par réforme. (Ces indemnités de rémunération étant proportionnées au nombre d'enfants se trouvant à sa charge.)

Malheureusement, quand il s'agit de faire l'application du premier principe, on se bute à de nombreuses difficultés. Le mot " Incapacité de travail " est un terme trop large et trop vague. Au point de vue professionnel, il faut, en effet, distinguer l'incapacité de travail générale, celle qui correspond à l'incapacité physique et l'incapacité professionnelle p.d.

Presque toujours incapacité physique et incapacité professionnelle sont synonymes, et leurs taux sont égaux ; mais il est cependant des cas où il n'en est pas ainsi.

Prenons p.ex. : un horloger qui perd l'index de la main droite. L'incapacité physique de cet homme doit être évaluée au maximum à 15 per cent., tandis qu'au point de vue capacité ouvrière, le préjudice qu'il subit peut être évalué de 40 à 50 per cent. Un facteur des postes amputé d'une jambe est bien plus handicapé au point de vue de l'exercice de son métier qu'un cordonnier et les exemples pourraient ainsi être multipliés, où le taux de l'incapacité physique ne correspond pas à celui de l'incapacité professionnelle.

D'où premier principe : Pour être juste et équitable, la loi devrait tenir compte, dans l'évaluation du taux de la pension, non pas seulement de l'incapacité physique, mais aussi de l'incapacité professionnelle p.d.

Des tableaux indiquant exactement les professions où tel organe, voire même tel ou tel membre ou segment de membre joue un rôle prépondérant, devraient être établis, et le taux de la pension des militaires exerçant l'une ou l'autre de ces professions devrait être majoré suivant un barème fixé d'avance.

III.—Unification des barèmes des taux d'incapacités annexes, dans les différents pays, aux lois sur le licenciement par réforme.

Il serait d'ailleurs hautement désirable que les barèmes des taux d'incapacités annexés, dans les différents pays, aux lois sur le licenciement par réforme, fussent révisés et unifiés.

Sans doute, nous accordons volontiers que, étant donné les conditions différentes de vie, le chiffre maximum de la pension puisse varier d'un pays à l'autre ; mais nous ne comprenons pas pourquoi la main d'un belge ou d'un français (70 per cent.) vaut plus au point de vue physique que la main d'un anglais (60 per cent.) ; pourquoi la surdité totale est évaluée en Angleterre à 70 per cent., alors qu'en France et en Belgique le taux d'incapacité qu'elle entraîne n'est que de 50 per cent.

D'ailleurs d'une façon générale, les guides-barèmes d'incapacités mis à la disposition des Commissions de licenciement par réforme sont loin de répondre aux exigences de la médecine légale des traumatismes de guerre. On sent trop que ces guides ont été écrits par des médecins qui sans doute paraissent avoir une certaine expérience de la chirurgie traumatique du temps de paix ; mais n'ont pas encore acquis l'expérience nécessaire de la médecine et de la chirurgie de guerre, telles que les a faites le cataclysme que nous vivons.

Au moment où ces guides ont paru, leurs auteurs n'avaient pas encore eu le temps d'apprécier avec toute la sagacité voulue, les conséquences multiples et parfois si désastreuses que les blessures et les maladies de guerre pouvaient avoir sur la capacité physique et intellectuelle de l'être humain.

Aussi bien tous sont-ils plus incomplets les uns que les autres et les médecins qui doivent les utiliser sont unanimes à en

demander la revision et unification ; tout au moins pour ce qui concerne les pays Alliés.

Cette tâche devrait, à notre avis, être confiée à une Commission inter-alliée composée de Médecins-chirurgiens, spécialistes en accidents de travail, ayant complété leurs connaissances au cours de la présente guerre, par une étude approfondie des blessures et des maladies qu'elle a provoquées.

Cette unification des barèmes aurait en plus un avantage très appréciable pour l'après-guerre. Elle permettrait en effet, d'instituer une jurisprudence très étendue pour l'évaluation des incapacités de travail. Les conséquences que les blessures et maladies de guerre ont exercé sur l'organisme humain dépassent de loin, par leur variété et leur inattendu, toutes celles que l'on avait pu observer en temps de paix, à la suite des accidents du travail.

Les taux fixés par la Commission Inter-alliée pourraient avoir après la guerre, la valeur de choses jugées et le barème qu'elle aurait établi serait, de par le fait de son étendue et de la multiplicité des cas qu'il envisagerait, un guide précieux de Médecine Légale des accidents du travail.

IV.—Les modalités multiples des infirmités et affections résultant des fatigues et dangers de la guerre actuelle.

(1) CLASSEMENT DES MUTILÉS ET INVALIDES AU POINT DE VUE MEDICAL ET DISPOSITIONS LEGALES QUI DOIVENT EN DÉCOULER.

Cette guerre n'a pas provoqué que des mutilations ou maladies entraînant des incapacités de travail, elle a hélas ! réduit des soldats en plein épanouissement de leur force physique, à l'état de pauvres épaves humaines, condamnées à finir leur existence sur un lit de douleurs. Les grands blessés du système nerveux, les tuberculeux avancés, les cardiaques en rupture de compensation font partie de cette triste cohorte. On pourrait y ajouter ceux dont les événements de guerre ont définitivement déséquilibré les facultés mentales et qui par le fait même, doivent être mis à l'abri dans des Instituts spéciaux.

Tous ces malheureux ne sont pas seulement incapables de tout travail, mais ils réclameront jusqu'à la fin de leur vie, une assistance médicale continuelle et appropriée à leurs lésions.

Ce n'est pas par l'octroi du maximum de la pension de réforme que l'Etat peut se considérer libre de toute obligation envers eux ; il a, au contraire, le devoir moral de leur assurer, dans des établissements spéciaux, tous les secours et tout le réconfort que l'art médical peut apporter au soulagement de leur pénible existence.

Au point de vue médical, pour le licenciement par réforme, il faut donc distinguer deux grandes catégories de mutilés et invalides.

I. Ceux qui auront toujours besoin d'assistance médicale, ou qui, comme on le dit en matière d'accident du travail, ne seront jamais consolidés. Nous venons de voir ci-dessus quelles sont envers eux les obligations de l'Etat.

II. Ceux dont les lésions peuvent être considérées comme guéries ou ayant atteint un état peu susceptible de changement, en d'autres termes, ce sont les mutilés et invalides consolidés, parmi lesquels il y a lieu de faire encore des distinctions très nettes.

(2) CLASSEMENT DES MUTILES ET INVALIDES CONSOLIDÉS AU POINT DE VUE CAPACITÉ PHYSIQUE ET PROFESSIONNELLE. DISPOSITIONS LEGALES QUI DOIVENT DÉCOULER DE CE CLASSEMENT.

Il y a 1° les mutilés et Invalides qui, sont non seulement incapables de tout travail utile, nous qui, en plus, du fait de leurs lésions, ont toujours besoin d'un aide pour la vie de relation. Ce sont p. ex. : les aveugles, les amputés des 2 membres supérieurs, les amputés des 2 cuisses, et d'une façon générale les invalides qui ont perdu l'usage simultané de deux membres homonymes. Le maximum de la pension de réforme ne leur suffira pas pour vivre dignement et l'Etat devrait leur accorder un supplément de pension pour subvenir aux frais et dépenses que leur suscitera l'aide qui leur est indispensable pour la vie de relation.

(2°) Les mutilés et invalides dont le rendement professionnel est pratiquement nul, mais qui dans la vie relation peuvent encore se suffire à eux-mêmes ; à ceux-là sera accordé le maximum de la pension de réforme. Tels sont p.ex. : les amputés des 2 jambes, les amputés d'un bras en même temps atteints et enucleation d'un œil, les trepanés atteints de crises fréquentes d'épilepsie Jacksonienne, &c.

(3°) Les mutilés et invalides qui ont perdu un membre ou qui sont atteints de lésions équivalentes à la perte d'un membre. La grande majorité d'entre eux ne sera plus en état de reprendre le métier d'avant-guerre et l'Etat a l'obligation morale de leur assurer tous les moyens les plus utiles pour l'apprentissage d'une nouvelle profession.

(4°) Les mutilés et invalides atteints de lésions d'importance moyenne, mais donnant droit au licenciement par réforme. Parmi ceux-ci, il en est, beaucoup qui ne pourront plus reprendre leur ancien métier ; à eux aussi, l'Etat devra donner tous les moyens utiles pour apprendre un nouveau métier.

(5°) Les petits mutilés et invalides dont l'infirmité ou l'affection ne donnent pas droit à l'exemption définitive et qui, par le fait même, sont maintenus sous les armes jusqu'à la fin de la guerre. Parmi ces soldats, il se trouvera, rarement, il est vrai, des ouvriers qui précisément à cause de leur lésion, en apparence minime, seront gravement atteints dans leur capacité professionnelle.

Après la guerre, l'Etat devra à ces serviteurs réparation du préjudice qu'ils auront subi pendant qu'ils étaient à son service. Une pension spéciale devrait leur être accordée et en tout cas ils devraient être assurés qu'après la guerre, ils auront droit à l'apprentissage d'un nouveau métier dans les Instituts officiels de Ré-éducation professionnelle.

(3) ASSOCIATION CHEZ LE MEME SUJET, D'INFIRMITÉS OU D'AFFECTIONS MULTIPLES OU D'INFIRMITÉS ET AFFECTIONS MULTIPLES. BASES POUR L'ÉVALUATION DU TAUX DE L'INCAPACITÉ.

Il est fréquent de rencontrer dans les commissions de réforme, des sujets porteurs de plusieurs mutilations qui, prises chacune isolément, suffiraient à justifier l'octroi d'une pension. D'autres fois, c'est un blessé qui, au cours des étapes qu'il a parcourues, en passant d'un hôpital à l'autre, a contracté une affection des organes respiratoires qui a dégénéré en tuberculose. Les exemples pourraient ici aussi être multipliés, et la complexité de ces associations d'infirmités ou d'affections multiples pour la fixation du taux de l'incapacité totale qu'elles entraînent n'a pas échappé aux législateurs. En France, le problème a été résolu d'une façon relativement équitable. L'infirmité ou l'affection qui entraîne le taux d'incapacité le plus élevé, compte pour son entièreté.

Le taux des autres incapacités est successivement calculé proportionnellement à la capacité restante.

Ainsi supposons un sujet atteint de 3 mutilations qui évaluées isolément entraînent des incapacités de 30, 20 et 10 per cent.

La première compte pour, 30 %.

$$\text{la seconde pour } \frac{20 \times 100 - 30}{100} \text{ ou } \frac{20 \times 70}{100} = 14 \%$$

$$\text{la troisième pour } \frac{10 \times (100 - (30 + 14))}{100} \text{ ou } \frac{10 \times 56}{100} = 5.6 \%$$

soit au total (30 + 14 + 5.6) ou 49.6 % en arrondissant 50 %.

Ce système n'est cependant pas exempt de critiques, surtout quand il s'agit de mutilation d'une certaine gravité, car alors le sujet qui peut le plus souvent être considéré comme un grand mutilé est nettement désavantagé. Ainsi prenons le cas d'un réformé atteint de lésions entraînant des incapacités de 50, 30, 25 per cent.

La première lésion comptant pour 50 %.

$$\text{la seconde ne comptera plus que pour } \frac{30 \times 50}{100} \text{ ou } 15 \%$$

$$\text{le troisième pour } \frac{25 \times 35}{100} \text{ ou } 8.75 \%$$

soit au total 73.75 % ou en arrondissant 75 %.

Ce chiffre de 75 per cent. est évidemment trop peu élevé si l'on considère l'ensemble des mutilations.

Le système belge des évaluations avantage plus encore les porteurs de plusieurs petites mutilations. En Belgique, l'incapacité la plus élevée compte aussi pour son entièreté, mais par ordre décroissant de gravité, on ajoute au taux des autres incapacités les chiffres 5, 10, 15 et c'est avec ces chiffres que l'on calcule le taux de ces autres incapacités.

Reprenons nos exemples de tantôt :—

Soit un sujet porteur de 3 mutilations évaluées à 30, 20 et 10 %.

La première comptera pour 30 %.

la seconde va compter pour $(20 + 5) \%$ de 70 % restant soit 17·5 %.

la troisième pour $(10 + 10)$ de 53·5 % soit 10·7 %.

soit au total $30 + 17·5 + 10·7$ ou 58·2 %, en arrondissant : 60 %.

c-à-d. un chiffre égal à la somme des trois mutilations $(30 + 20 + 10)$.

Le système français ne donnait que 50 pour cent, ce qui était juste. Remarquons de plus qu'avec le système belge, souvent une mutilation légère est évaluée à un taux plus élevé que si elle intervenait pour la totalité de son chiffre initial dans le calcul de l'incapacité totale. En l'espèce, la 3^e mutilation est évaluée ici non plus à 10 pour cent, mais à 10·7 pour cent.

Nous allons voir comment un grand mutilé porteurs de plusieurs mutilations graves est partagé en suivant les mêmes règles.

Soit un sujet porteur de 3 mutilations évaluées à 50, 30 et 25 %.

La 1^e comptera pour 50 %,

la seconde pour $\frac{(30 + 5) \times 50}{100}$ ou 17·5 %.

la troisième pour $\frac{(25 + 10) \times 32·5}{100}$ ou 11·375 %.

au total $(50 + 17·5 + 11·375)$ ou 78·875 %, ou 80 %.

Le système belge comparé au système français avantage donc légèrement les porteurs de mutilations multiples graves, mais il a aussi le grand inconvénient de favoriser outre mesure les porteurs de mutilations multiples de peu d'importance. L'équité doit être cherchée dans un moyen terme.

Application du système français quand l'incapacité la plus forte est évaluée à moins de 50 pour cent—quand cette incapacité dépasse 50 pour cent, application du système belge.

Cette façon de faire est la plus logique et c'est celle qui correspond le mieux à la réalité des faits. Car quand la mutilation la plus grave diminue déjà à elle seule, dans une forte proportion la capacité du sujet, les autres mutilations de moindre importance retentissent plus gravement sur le restant de sa capacité, que si elles étaient prises isolément. L'addition de 5, 10 et 15 pour cent au chiffre initial des différentes mutilations subséquentes, permet donc dans une certaine mesure de tenir compte de ces aggravations.

V.—Office National des Mutilés et Invalides de la guerre.

Indépendamment des considérations sociales relatives au placement, à l'établissement, à l'encouragement moral et matériel des soldats réformés, il y a des raisons médicales impérieuses qui plaident en faveur de la *création*, dans chaque pays, d'un *office national des mutilés et invalides de la guerre*. Sans doute pour beaucoup de réformés, l'Etat pourra se considérer libre de toutes obligations, une fois remplies les formalités prévues par la loi sur le licenciement par réforme ; mais nous allons le voir, nombreuses seront aussi les circonstances où, après le retour dans leurs foyers, mutilés et invalides de la guerre, auront encore besoin de la protection de l'Etat.

Et cette tâche tutélaire ne pourrait être mieux confiés qu'à l'office national des mutilés et invalides de la guerre. Cette institution qui serait un organisme gouvernemental, analogue à notre caisse d'épargne belge, aurait une large indépendance, une direction et une administration qui lui seraient propres. Il jouirait en plus de la personnification civile, ce qui lui permettrait de recevoir des dons en espèces et en nature.

Au point de vue spécial qui nous occupe, il se substituerait à l'Etat pour assurer aux réformés, en toutes circonstances et dans les meilleures conditions, toute l'aide médicale et matérielle que leur état de santé pourrait réclamer.

Dans les lignes qui vont suivre, nous étudierons comment l'office national pourrait remplir les obligations de l'Etat.

(1^o) Envers les réformés auxquels le port d'une prothèse est indispensable.

(2^o) Envers les réformés dont les infirmités ou affections sont susceptibles de réveil pathologique plus ou moins grave.

(3^o) Envers les réformés victimes d'accident de travail.

(4^o) Envers les veuves et les ayants droits des militaires réformés qui meurent, après retour dans leurs foyers, des suites des infirmités ou affections contractées en service.

(1) OBLIGATIONS DE L'ETAT ENVERS LES REFORMES AUXQUELS LE PORT D'UNE PROTHESE EST INDISPENSABLE.

Donner, chaque année, à ces réformés une allocation pour réparations et remplacements éventuels de leur prothèse, serait, croyons-nous, une mesure inopportune. Ou le mutilé destinera la somme lui allouée à un tout autre usage, ou s'il se décide à faire lui-même l'achat de la prothèse, il risquera d'être exploité par des commerçants malhonnêtes qui lui fourniront des appareils de mauvaise qualité et rapidement inutilisables. Un contrôle pour la fourniture des appareils de prothèse s'imposera donc. Comment pourrait-il être réalisé?

L'office national aurait ses ateliers à lui ou des ateliers agréés pour la fabrication et la réparation des appareils de prothèse. Une Commission supérieure pour l'amélioration de la prothèse désignerait chaque année, après études préalables, les meilleurs types d'appareils prothétiques à fournir aux réformés.

Dans chaque chef-lieu d'arrondissement seraient utilisées des Commissions de prescription et de réception d'appareils de prothèse.

Pour les grandes réparations comme pour le renouvellement de leurs appareils, les réformés devraient passer par ces Commissions. Ils seraient indemnisés de leurs frais de déplacement. Si éventuellement ils devaient séjourner dans un Centre d'appareillage, soit pour prise de mesure ou essai d'appareils, il leur serait accordé des indemnités de chômage. Le taux de l'indemnité quotidienne de chômage pourrait, par exemple, être évalué à la 360^e partie de la pension que la réformé aurait reçue, si au moment de son licenciement il avait été désormais incapable de tout travail.

Pour les petites réparations les mutilés pourraient être autorisés à les faire exécuter sur place, et les dépenses qu'ils auraient faites de ce chef, leur seraient remboursées après envoi de pièces justificatives à l'administration de l'Office National.

(2) OBLIGATIONS DE L'ETAT ENVERS LES REFORMES DONT LES INFIRMES OU AFFECTIONS SONT SUSCEPTIBLES DE REVEILS PATHOLOGIQUES.

Bien des blessures causées par les projectiles modernes ont le grave inconvénient d'être susceptibles de réveils pathologiques. Ainsi p.ex. : chez des mutilés ayant été atteints de fracture esquilleuse par éclat d'obus et dont la lésion est cicatrisée depuis des années, il peut apparaître, brusquement sous l'influence du plus petit traumatisme ou parfois même spontanément, un réveil de l'infection en plein foyer de fracture. C'est une esquille qui se détache, une ostéomyélite qui se déclare. Par le fait même, l'état du blessé réclame des soins chirurgicaux urgents et il entraîne une incapacité totale de travail plus ou moins longue. Autre cas, celui d'un mutilé dont le nerf sciatique a été sectionné et qui, des années après sa blessure, à la suite p.ex. ; d'un refroidissement du pied malade, voit apparaître aux orteils et à la plante du pied des ulcères trophiques. Ces complications éloignées et récidivantes des lésions du nerf sciatique ne sont pas rares, elles réclament elles aussi des soins médicaux et elles déterminent également des incapacités totales de travail parfois de très longue durée.

Dirons-nous que les réformés tuberculeux, cardiaques, néphritiques, après une période de calme relatif, peuvent aussi voir leur affection reprendre une allure aiguë, au point qu'ils sont rendus, pendant un temps plus ou moins long et parfois même définitivement incapables de tout travail et que leur état de santé nécessite alors des soins médicaux spéciaux et réguliers.

Pour les réformés de cette catégorie dont l'état de santé susceptible d'aggravation dans l'avenir, les lois prévoient bien une revision des dossiers, de pensions et éventuellement une augmentation du taux de celles-ci. Mais ce qu'elles ne prévoient pas, c'est le cas tout spécial des réformés qui, atteints d'incapacités partielles de travail, sont du fait des réveils pathologiques de leurs infirmités ou affections, exposés à subir momentanément des préjudices considérables. Frais médicaux et chirurgicaux, parfois même frais d'hospitalisation et surtout pertes de salaires par suite d'incapacités totales de travail pendant toute la durée du traitement, tel est le bilan de ces réveils pathologiques.

La pension du mutilé risque d'y passer tout entière, si l'Etat n'intervient pas ! Aussi bien la justice la plus élémentaire réclame-t-elle cette intervention, et ici encore, l'office national pourra se substituer utilement à l'Etat.

Son action ne se limiterait pas seulement à indemniser le mutilé des frais médicaux et d'hospitalisation éventuelle consécutifs à ces réveils pathologiques, mais il devrait encore lui accorder pendant toute la durée du traitement, une indemnité quotidienne de chômage. Le taux de cette indemnité quotidienne pourrait être évalué, comme nous l'avons proposé ci-dessus, à la 360 pour cent partie de la pension que le réformé aurait reçue, si au moment de son licenciement par réformé, il avait été désormais incapable de tout travail.

(3) OBLIGATIONS DE L'ETAT ENVERS LES REFORMES VICTIMES D'ACCIDENTS DU TRAVAIL.

Et ici, nous touchons à un des problèmes économiques des plus délicats et des plus graves, *l'emploi de la main d'œuvre mutilée*.

Cette question apparaît à première vue tellement complexe et pleine de difficultés pour l'avenir que certains gouvernements, notamment le gouvernement français ont cru devoir lui donner, dès à présent, une solution. La loi française du 25 novembre, 1916, ordonne que toutes les fois qu'un militaire, marin et assimilé, atteint d'infirmités graves et incurables résultant soit de blessures reçues au cours d'événements de guerre ou en service commandé pendant la guerre actuelle, soit de maladies contractées ou aggravées par suite des fatigues ou dangers du service pendant la guerre actuelle, aura été victime d'un accident du travail survenu dans les conditions prévues par les lois des 9 avril, 1898, 30 juin, 1899, 12 avril, 1906, 18 juillet, 1907, et 15 juillet, 1914, d'ordonnance du président ou le jugement du tribunal qui fixera le montant des rentes pouvant résulter tant de sa mort que de la réduction permanente de sa capacité de travail, devra indiquer expressément :

(1°) Si l'accident a eu pour cause exclusive l'infirmité de guerre préexistante ;

(2°) Si la réduction permanente de capacité résultant de l'accident a été aggravée par le fait de la dite infirmité et dans quelle proportion.

Dans le premier cas, le chef d'entreprise sera exonéré de la totalité des rentes allouées à la victime ou à ses ayants droit par l'ordonnance ou le jugement ; et, dans le second cas, de la quotité des dites rentes correspondant à l'aggravation ainsi déterminée.

Le capital représentatif des rentes auxquelles s'appliquera cette exonération sera versé à la caisse nationale des retraites pour la vieillesse par prélèvement sur les ressources d'un fonds spécial de prévoyance dit " des blessés de la guerre," dont le fonctionnement sera assuré par le Ministre du Travail et de la Prévoyance sociale et la gestion financière par la Caisse de dépôts et consignations.

Le fonds spécial de prévoyance sera alimenté par une contribution des employeurs et des organismes d'assurances, dont le taux sera fixé chaque année par la loi de finances suivant les modalités indiquées par les articles 25 de la loi du 9 avril, 1898, 4 et 5 de la loi du 12 avril, 1906, modifiée par celle du 26 mars, 1908, 4 de la loi du 18 juillet, 1907, et 6 de la loi du 15 juillet, 1914, en ce qui concerne les différentes catégories d'employeurs, et, par l'article 27, dernier alinéa, de la loi du 9 avril, 1898, modifiée par celle du 31 mars, 1905, en ce qui concerne les organismes d'assurances ; la contribution de ceux-ci doit rester exclusivement à leur charge."

Etant donné d'une part le fonctionnement des lois d'accidents du travail avant la guerre et d'autre part, la pénurie de main-d'œuvre qui sévira après la guerre, on peut se demander si une telle loi est bien opportune et répond aux nécessités présentes.

Sans doute, avant la guerre, les grandes sociétés industrielles, pour ne pas être dupes de la simulation, en matières d'accident du travail, avaient établi l'examen médical préalable à l'entrée dans leurs usines et toute infirmité ou affection décelée au moment de cette admission, était soigneusement décrite et consignée sur la fiche médicale de l'ouvrier. Si une blessure par accident du travail survenait, l'ouvrier blessé grâce à cet examen médical préalable, ne pouvait alléguer que la lésion dont il était porteur au moment de son admission avait été causée par l'accident, tout au plus pouvait-il prétendre qu'elle en avait été aggravée. La tâche de l'expert était ainsi notablement facilitée et dans le cas où l'aggravation était prouvée, la jurisprudence s'était établie que l'employer devait au blessé l'entière responsabilité de l'incapacité de travail résultant de ses lésions.

Ainsi, p. ex. : un ouvrier ankylosé du coude était victime, à la suite d'un accident du travail, d'une contusion de coude. Si celle-ci évoluait sans complication, tout rentrait dans l'ordre, après un mois de traitement, le blessé reprenait le travail, sans aucune arrière-pensée, parce qu'il ne pouvait prétendre que son ankylose du coude, dûment constatée comme antérieure à l'acci-

dent, était une conséquence de ce dernier ; mais qu'à la suite du traumatisme, un foyer tuberculeux, p.ex. : vint à se réveiller au niveau du coude et entraîna des phénomènes d'une gravité telle que l'amputation devint nécessaire, l'employeur était tenu d'indemniser l'ouvrier comme s'il avait perdu un bras valide.

Et pourquoi n'en serait-il pas de même pour les mutilés ! L'examen médical d'embauchage ne sera pas, croyons-nous, un obstacle à la rentrée des réformés dans nos usines et nos ateliers.

Les rentes à servir aux mutilés victimes d'accidents du travail ne seront d'ailleurs basées que sur le salaire qu'ils gagneront au moment de l'accident.

Le système français risque de créer bien des conflits entre les employeurs représentés par les Cies d'assurances d'une part et l'administration du Fonds de prévoyance d'autre part. En fin de compte, les mutilés que l'on a voulu protéger seront encore les victimes de ces conflits de responsabilités.

Les mutilés et invalides de la guerre devraient être considérés comme des citoyens d'une catégorie spéciale pour lesquels l'Etat devrait avoir une sollicitude particulière et au sujet desquels la spéculation serait interdite.

Pourquoi, par ex. : l'employeur (ou son remplaçant, la Cie d'Assurances) ne verserait-il pas à l'Office National des mutilés et invalides les primes d'assurances contre les accidents du travail de tous les ouvriers mutilés ou invalides qui travaillent dans ses ateliers. Ces primes d'assurance de la main d'œuvre mutilée serviraient à constituer un " fonds spécial de prévoyance " des mutilés et invalides de la guerre, victimes d'accident du travail.

Si un accident survenait, à un ouvrier mutilé ou invalide de la guerre, c'est à ce fonds qu'incomberaient les frais médicaux et pharmaceutiques, ainsi que les indemnités de chômage, calculées d'après la loi des accidents du travail. Ce serait encore le " fonds de prévoyance " administré par l'Office National qui serait chargé de constituer les capitaux représentatifs des rentes à payer pour la mort ou la diminution de capacité professionnelle.

Les primes d'assurance étant basées sur le salaire des ouvriers, celles que le patron devrait payer pour ses ouvriers mutilés de la guerre, ne seraient pas, en principe, différentes de celles qu'il payerait pour les ouvriers valides. Au moment de l'embauchage, il n'y aurait pas de distinction à faire entre l'ouvrier valide et l'ouvrier mutilé. Si un accident survenait à ce dernier au point d'aggraver des lésions préexistantes et d'augmenter ainsi les risques professionnels, ce n'est pas le patron qui en supporterait les conséquences, mais le Fonds de Prévoyance.

Il n'est pas juste de faire supporter aux employeurs les surrisques de la main d'œuvre mutilée de la guerre. C'est l'Etat qui doit les endosser, quitte aux patrons à collaborer au Fonds spécial de Prévoyance, par des primes d'assurance proportionnelles aux risques de leur entreprise et au salaire de leurs ouvriers mutilés.

(4) OBLIGATIONS DE L'ETAT ENVERS LES VEUVES ET LES AYANTS DROIT DES MILITAIRES REFORMES QUI, MEURENT APRES RETOUR DANS LEURS FOYERS, DES SUITES DES INFIRMITES OU AFFECTIONS CONTRACTEE EN SERVICE.

En Angleterre seulement, l'article 11 du Décret royal du 27 mars, 1917, prévoit le droit à une pension pour les veuves de soldats qui, en deans les 7 ans après leur licenciement, meurent de maladies contractées ou aggravées en service. Pour les blessures ou infirmités contractées en service, le délai de 7 ans commence à partir du moment du traumatisme. Dans l'un et l'autre cas, ce délai de 7 ans, prévu par la loi anglaise, ne nous paraît pas suffisant. Il devrait être porté à 10 ans au moins, après le licenciement par réforme, et d'autre part, une solution mixte, basée sur l'assurance-vie, telle que le gouvernement Belge l'avait organisé en temps de paix, pour les assurances ouvrières, devrait, croyon-nous intervenir ici.

Ce serait encore l'Office National des mutilés et invalides de la guerre qui serait chargé de co-ordonner les efforts en vue d'assurer aux veuves et aux orphelins des mutilés et invalides de la guerre, venant à mourir après retour dans leur foyer, une pension suffisante pour subvenir à leurs besoins.

Ainsi vis-à-vis des mutilés et invalides de la guerre, rendus à leur famille et ayant repris contact avec la vie économique du pays, l'Office National des mutilés et invalides jouerait le rôle d'une vaste compagnie d'assurances comprenant, en somme, trois branches principales.

(1°) *La branche assurance-maladie*, qui fonctionnerait administrativement comme un bureau de bienfaisance. Elle fournirait aux réformés en cas de réveils pathologiques, d'infirmités ou affections contractées en service, tous les soins médicaux et pharmaceutiques. Elle leur procurerait au besoin l'hospitalisation dans des cliniques spéciales et elle leur assurerait en plus des indemnités de chômage pendant la durée du traitement. Elle leur fournirait éventuellement tous appareils prothétiques nécessaires.

(2°) *La branche assurance-accident*, qui fonctionnerait comme une compagnie d'assurance-accident.

(3°) *La branche assurance-vie*, qui serait organisée comme les assurances ouvrières qui existaient en Belgique avant la guerre.

Comme une grande Cie d'assurances, l'Office National aurait ses contrôleurs et inspecteurs médicaux, ses comités d'enquêtes locaux et le contrôle des secours accordés serait rigoureusement organisé.

Grâce à l'Office National des mutilés et invalides ainsi compris, l'œuvre d'assistance et de protection que l'Etat doit à ceux qui n'ont pas hésité à donner leur sang et leur santé pour la défense de la patrie, serait fondée sur des bases solides et elle permettrait à la Nation d'acquitter, à l'égard de ses fils plus glorieux, la dette sacrée qu'elle a contractée envers eux.

THE WORK OF LOCAL COMMITTEES IN ADMINISTERING THE NAVAL AND MILITARY WAR PENSIONS, &c., ACT, 1915.

By W. E. HINCKS, Esq.

If proof were needed that Great Britain was not anticipating war, that proof would be overwhelmingly forthcoming from the condition in which her Government Departments found themselves in August, 1914.

The unpreparedness of every Department (apart from those with which the Navy and Expeditionary Force were concerned) can hardly be exaggerated. While this is generally true, it is, unfortunately, particularly true of those Departments of State which were responsible for the payment of our soldiers and sailors and for the payment of the allowances due to their wives and children and other dependents. The confusion and chaos which prevailed here were indescribable. While the extent of the work of assisting the wives and dependents depended on the promptness and regularity with which the soldiers were paid, we are principally concerned with the delay and uncertainty which the wives and dependents suffered in the matter of the payment of their separation allowances. What a terrible shock the women sustained when they found that their husbands and sons who were "on the Reserve" were "called up."—War! War! It was unthinkable.—They were dazed, stunned. They could not grasp reality. Had the world suddenly become delicious? Or had madness suddenly, unexpectedly assailed mankind?

Unfortunately, they had perforce gradually to realise that war was a reality, and that it behoved them to take the necessary steps to accommodate themselves to the tragically new situation. Meantime, their men-folk, other than Reservists, their chief supports, were enlisting in multitudes. In their patriotic enthusiasm they "joined up," hardly bestowing a thought, so eager were they to serve their country, upon what provision their country was making for the women and children they were leaving behind. For the time being no provision had been made. Departments, like the individual, appeared to be bewildered and utterly and helplessly unprepared and for the moment impotent to meet the strangely unexpected situation. The women were without money even to purchase the barest necessities of life for themselves and their children. There was no State organisation to provide them with the means to enable them to do so. The scanty machinery which had existed before the war had not only proved itself to be inadequate, but that what there was had completely broken down. No blame whatever can be attached to the Paymaster's Department. They were simply unprepared for the attack levelled at them. On 4th August, 1914, when war was declared, there were only

fifteen hundred soldiers' wives on the books of the Army Paymaster. Barely two weeks later there were actually two hundred and fifty thousand soldiers' wives eligible for the separation allowance. Looking back at those times, it is a matter of marvel that order and system ever prevailed, let alone that they did prevail in so short a space of time.

At first, the total separation allowance paid to a wife was 7s. 7d. per week with an additional 1s. 2d. per week for each child—boys up to fourteen and girls up to sixteen years of age. These allowances were paid monthly. The actual payment made by the Government, therefore, for a wife with six children was 14s. 7d. per week. Added to this there would be 5s. 3d. deducted from the husband's pay, making her total weekly income 19s. 10d. At that time no allowances whatever were payable to the mothers of single men who were serving with the Colours, whether they were Reservists or Volunteers. Is it not amazingly to the credit of our men that, faced with the knowledge that their families would only receive such a miserable pittance, they responded with such magnificent loyalty and in such huge numbers to their country's call?

Government machinery is not so easily or speedily improvised. Relief came to this strained situation by the intervention of the Soldiers' and Sailors' Families' Association. This Association had performed excellent work in the interests of wives and dependents of soldiers and sailors during the South African War. In its ranks, at the outbreak of the present war, there were some ten thousand experienced workers, linked up with their nine hundred divisions or area committees. These ladies and gentlemen at once applied themselves to the task of providing wives and dependents with money necessary for their maintenance. Their numbers rapidly increased, and within a few weeks of the commencement of their work there were fifty thousand voluntary workers engaged in "War Work" under the auspices of the Association. On 6th August, 1914, H.R.H. The Prince of Wales issued an appeal for funds "to meet the considerable distress among the people of this country least able to bear it." On the same day the President of the Local Government Board issued a circular authorising the appointment of a Local Representative Committee in every County and in every Borough with a population of over twenty thousand people. But the response was so slow and unsatisfactory that the Central Committee, appointed by the Prince of Wales to administer the fund for which His Royal Highness was appealing, entrusted the distribution of the grants to the wives and dependents of soldiers and sailors to the Soldiers' and Sailors' Families' Association. In the few districts where this Association had no effective committee, the Local Representative Committee were to get to work as quickly as possible and render all necessary assistance to the families of soldiers and sailors who were in need. The appeal of the Prince of Wales for funds was attended with such immediate and remarkable success that, within the course of a few days, it was plain that those who were busy in attending

to the needs of the soldiers' families would not be hindered in their work by the lack of money. Gradually the Army Pay Offices began to get the better of their task, and something like ordered organisation prevailed. But the work of the voluntary agencies was exceedingly heavy. To them was entrusted the duty of supplementing the allowances made by the Government, upon which alone it was impossible for the women and children to live. The acuteness of the situation was relieved on 1st October, 1914, by the Government granting increased allowances to the wives and children of soldiers and also by the extension of the separation allowance to the wives of sailors, for whom hitherto no provision whatever had been made. The allowances, too, were to be paid weekly.

But by this time there were coming back to their homes the disabled soldiers. With what intense sympathy were they met in the offices at which they called. Here indeed was a phenomenon. The workers, in the rush and pressure, had hardly had time to think of the reality of war. They were absolutely immersed in their current duties. Now, indeed, they realised the horrible reality. But what could they do? Sympathy went out in heart-loads. But where could they look for intelligent direction to enable them efficiently and wisely to deal with the problem which the exigencies of war had now thrown upon them. No direction was forthcoming. The committees in their own way must act as they thought best. Until schemes were officially promoted, the care of the returned disabled men, along with their families, was entrusted to another military voluntary agency, the Soldiers' and Sailors' Help Society. The voluntary agencies of our country bridged the gulf of pain and distress at the outbreak of war, and they were the first to attend to the need of the first home-coming broken soldiers. They rendered their services cheerfully and never asked for recognition, to say nothing of reward. The country will be everlastingly their debtors.

Regarding the character of the work performed up to now, it would be cynically unjust to be critical. Regulations, it is true, were issued by the Central Committees, but the vast majority of workers hardly had time to digest them. Their work, so they felt, was too great, too important and too urgent to be restrained overmuch by tiresome regulations. There was an approach to Central Control, but this Control was quite devoid of authority. It is true, there were inspectors. But they were far too few in numbers to influence in the slightest degree the character of the work done, so far as observing the regulations was concerned. These committees had also granted gratuities out of the funds entrusted to them of five pounds to every widow and one pound to each child of a soldier or sailor killed during the present war, and one of three pounds to dependents other than wives. Generally speaking, there was manifested by all the committees a profusion of generosity in the making of grants. The hearts of all those participating were hyper-sensitive to the distress, mental and physical, they day by day saw being endured by the wives and dependents of those of their townsmen who

had taken arms against the enemy, and they not unnaturally disbursed the funds with which they were entrusted with a lavish hand. Looking back upon these troubled months, one feels that this lavish expenditure, even prodigal extravagance, was justified, in that it undoubtedly served a good purpose. It not only relieved the distress, but it allayed the anxiety of soldiers as well as that of their families, and provoked a frame of mind which assisted them to become quietly resigned to the abnormal condition of things which the war had brought in its train. Many of the "better class" cases caused them considerable concern owing to their inability adequately to meet the difficulties they presented, and it was with relief that they learned of the appointment of the Military Service (Civil Liabilities) Committee towards the end of May, 1915. By this time, generally speaking, the work was proceeding happily. The Paymaster's Department had to a great extent dealt with the arrears of work so that the current duties were quickly met. Industry was phenomenally active and wages good. Besides the Prince of Wales's Fund, employers and employed were contributing generously towards helping their soldiers' families. Distress for the moment had disappeared, and, so far as it could be expected under the circumstances, happiness and comfort generally prevailed.

But a great change was at hand. It was generally known that the Government had contemplated taking over the responsibility of the payment of supplementary allowances and the payment of all other grants which had so far been made out of voluntary funds. On 10th November, 1915, there was passed the Naval and Military War Pensions, &c., Act. There should be constituted a Statutory Committee of the Royal Patriotic Fund Corporation, and the functions of that committee should be to supplement pensions and grants and to make grants and allowances in cases where no separation allowance or pension is payable out of public funds; to make provision for the care of disabled officers and men after they have left service, including provision for their health, training, employment, &c. The Act was to become operative on 1st July, 1916. Local Committees had been formed to administer it in some two hundred and fifty areas in Great Britain. Later, when the Statutory Committee was absorbed in the Ministry of Pensions, no change whatever was brought about in the position and powers of the Local Committees. A great disappointment was felt by the good people who had worked as before described. They talked of the cold hand of officialism. They hesitated about continuing their work. They were genuinely and profoundly moved. One can even now almost feel and share the shudder that these good voluntary workers at that time of change experienced. Eventually their devotion to the work that they had so loyally performed led them to follow the lead of Parliament, and they soon realised that the cold hand of officialism was a myth, and that it was easily possible for the old spirit of sympathy and kindness still to permeate their activities, notwithstanding that henceforward it was to be performed under the authority of Parliament.

Soon after the work began to be performed under the authority of Parliament, inspectors were appointed whose duties it was to visit the offices of the Local Committees to examine the methods of case work, account keeping and general office methods, and to discover whether the local organisation was in a position to deal efficiently with the work of the area for which it was responsible, particularly were the Local Committees reaching the discharged disabled men in their district, and how were they dealing with them. Accompanying these duties, there was the implied intimation that the Local Committees were in the future to be subject to a Central Supervision, Direction and Control. The Central Authority desired exact information regarding the extent and character of the work done. From a number of committees information was desired as to why so much money was expended, and from others why so little money was spent. As some time had been allowed to elapse since the commencement of the work before the inspectors commenced their journeyings, the offices and committees had had time to digest the Statutory Committee's little booklet, Regulations Part II., and to give attention to the Official Circulars of the Statutory Committee. This little book, which was simply the Regulations in codified form by which the work in the earlier days had been directed, considerably disturbed many of the officers and committees. It indicated a stricter and more rigid *régime*. Resentment was directed particularly at Regulation 7 (1) *a*. Up to the time of the issue of Regulation Part II. this grant had been given to all who applied for it whose rent exceeded 4s. per week. No reservation whatever was introduced. Now, before it was given the committee had to be satisfied that the grant did not bring up the applicant's income to a larger amount than it reached before the war, after deducting an amount equivalent to the cost of the soldier's keep. These Regulations appeared to be invested with an authority which was quite absent from the Regulations issued previous to the constitution of the Statutory Committee. It was a most unpopular publication. Too official, too much Whitehall, were expressions frequently used when it was mentioned; but my opinion is that its temporary unpopularity was due almost solely to the fact, as I have said before, that it indicated—(1) Authority; (2) A stricter *régime*.

The inspectors too were at first not over-popular; but after a time, when Regulations and inspectors were better understood, they received treatment of quite a friendly character. The efficiency of the organisation of the offices of the Local Committees varied immensely. The greater proportion of them were run, if not entirely without paid officers, by the payment of merely a nominal sum as wages. All the office work, the investigation, friendly visiting, &c., was done by voluntary workers. But paid labour had to be introduced. Better records were exacted and a more thorough investigation insisted upon, with necessary verification of wages, &c. The organisation of many of the offices of boroughs and that of the majority of counties was anything but effective. They had not obtained a reliable estimate of the problem of their areas so far as the general work was con-

cerned. As to their work on behalf of the discharged disabled man, they restricted it rigidly to attending to those men who called upon them. They were urged to go further—to visit every man discharged to their respective areas as soon as possible after the day he returned to their area. This attention was due to the man. Besides, the Ministry of Pensions would some day expect an exact return of the position of every man who had been discharged from the Army or Navy as disabled and unfit for further service. He should be seen, his actual condition discovered, helped if necessary, and if not, informed exactly what to do whenever he felt the need of outside assistance or advice. Generally the suggestion was not only favourably entertained, but also acted upon. Officers and committees also responded readily to the suggestion made to them that a knowledge of their work, and what they were empowered to do should be so extensively circulated that there should not be a wife or a dependent of a discharged soldier in their area who might be in any kind of trouble, but who should know to whom to apply for the needed advice or assistance. Invariably they undertook at once to strengthen their organisation accordingly.

The inspectors also discovered that in too many offices the methods adopted of performing their routine work, especially their case work, was without definite plan. For instance, many committees did not register any cases other than those who applied for monetary grants. No record was taken of those persons whose application resulted only in correspondence. This, notwithstanding that such an application as a rule entailed more work than did a simple application for a grant. Again, no record was taken of applications declined. Often they were declined by an office worker entirely on his or her own responsibility, judgment being applied merely on the verbal statement of the applicant. By this partial registration the committees were never able to demonstrate fully what they had performed. If all Local Committees had from the outbreak of war registered every family who had been advised as well as helped, the volume of work shown as having been performed would receive an immense addition. It only needed the suggestion for fuller registration for it to be at once acted upon. Opportunity was taken during these visits to overhaul the case work in the endeavour to discover what justification the records contained for the assistance granted. Generally speaking, the written records were extremely limited, by far too many committees being content to judge applications entirely on verbal statements and local knowledge. Still, there can be no doubt that the work done shows sterling improvement, and one has plenty of reason for saying that under the direction of the Statutory Committee there was decided changes for the better and that there is still progressive improvement.

Difficulty in the interpretation of Regulations was frequently alleged as justification for helping really ineligible applicants, so "they were given the benefit of the doubt." In this connection the "War Pensions Gazette" has been most welcome.

Workers, struggling and worried with "difficult cases," have found their difficulties solved in its columns in reply to some other troubled worker, and upon seeking the aid of the "Gazette," have always been glad to obtain authoritative rulings. The work done within Regulations Part I. has been of a really high order, and is in every way creditable to the Local Committees. Properly to fill up the Forms P. and D. amid the bustle and strain of an average Local Committee office is no easy task. In the pressure of their work, a pressure the intensity of which can never be appreciated by anyone who has not worked for at least six months in the office of a Local Committee, I have often marvelled at the patience displayed and the excellent results achieved.

But besides the actual granting of allowances, the Local Committees have more than justified their existence by the work they have attempted in the matter of correspondence and as general advisory bureaux. It is no exaggeration to say that in all times of trouble the wives and dependents find their way to the office of the Local Committee. Every difficulty with regard to pay, allowances and pensions are brought to the offices, family troubles, trouble with the landlord, trouble over debts, neighbours, &c., &c., *ad infinitum*. The work done in this direction is too varied adequately to be described, and its value to those benefited is certainly too high to be properly assessed. In the matter of treatment and training, the Local Committees have worked with a devotion and persistence which it is no exaggeration to class as heroic. There are no time servers in this work. All workers, paid and unpaid, have worked almost by night as well as by day to attend to the needs of the discharged disabled sailor and soldier. No "War Workers," in whatever sphere their energies have been exerted, have worked more nobly and with a greater self-sacrifice than have the War Pensions Committee Workers scattered throughout the length and breadth of the land. And their work, human as well as administrative, has been highly successful.

At the present time (6th March, 1918) there are at least nine thousand six hundred and one men receiving treatment, and the total number who have been and are being treated is eighteen thousand six hundred and ninety-three. As to the training, there were on 27th February, 1918, two thousand seven hundred and eighty-seven men being trained, the total number admitted to training being four thousand five hundred and five. These numbers are added to materially every week. As time goes by the increase in the numbers will be more marked. The committees are only just now getting a grip of their work and discovering its possibilities. The activities of the Ministry of Pensions has made quicker movement possible. There has been decentralisation. The Local Committees are waiting for an extension. Too much centralisation sterilises the alertness and damps the enthusiasm of those dealing at first hand with the human element. They desire to be trusted more, and claim that if they were their work would be rendered the easier and would

be attended with speedier results to the advantage of the disabled men. Certainly in this work the Local Committees are now active and alert and intelligently eager to render every possible service to those men committed to their care. The Local Committees are equally keen to do their utmost for the wives and dependents and for the widows and orphans.

If the intensity and the hot enthusiasm of the earlier days has to some extent cooled down, the character of the work now being done is none the worse. From my experience, I am justified in saying that the character of the work now being done is higher and better than it has ever before been. If not hotly enthusiastic, the workers are steady and judicial. Experience has shown them the potential dangers as well as the benefits of their work. They are infinitely more valuable now in committee. Their outlook is more comprehensive. They look further than they did formerly. All this applies to Local Committees as well as to workers. And feeling strongly that only the simple truth is being stated, is not one justified in looking forward hopefully to the future, confident that, benefited and strengthened by the varied experience gained during three and a half years' work, the work on behalf of wives and children, widows and orphans, and that undertaken in the interests of disabled men, will be an immense improvement, good as it has been, on what has up to now been attempted?

W. E. HINCKS.

NOTE.

In further explanation of the powers of Local Committees in regard to wives, children and dependants of serving men, I add the following Notes, which have been kindly drawn up by Mr. F. G. Hinks.

The following notes will give a general idea of the scope of the regulations. The word "dependant" is used throughout in the sense of dependants other than wives and children.

Supplementary Separation Allowances.

Supplementary Separation Allowances may be granted in exceptional circumstances, and the test of "exceptional circumstances" is the existence of disproportion between the present income of the household or the dependant and that enjoyed before the man's enlistment after allowing for the saving resulting from his enlistment, and, generally speaking, no supplementary allowance can be given unless disproportion of income exists.

Regulation 7 (1) (a) as revised.—An allowance to wives governed by the amount of the rent and other contractual obligations payable. The allowance is limited to 12s. a week, and

cases where the total of the obligations exceeds 12*s.* a week must be referred to the Military Service (Civil Liabilities) Committee.

Hitherto the powers of Local Committees have been limited to granting allowances in respect of rent and rates exceeding 4*s.* a week. The whole of the obligations up to 12*s.* a week may now be met if the applicant can show that there is a sufficient drop in her income as a result of her husband's enlistment.

Regulation 7 (1) (b).—A similar allowance to dependants other than wives, but only payable where the maximum State separation allowance is being paid and is less than the assessed dependence.

Regulations 7 (1) (d) and 7 (1) (h).—The Government scheme of January, 1917, revising separation allowances to meet the rise in prices dealt only with wives with children under 14, and it was left to the Statutory Committee to deal with cases not covered by the scheme.

Regulation 7 (1) (d) authorises allowances up to 4*s.* a week to childless wives and dependants other than wives who are unable to work. *Regulation 7 (1) (h)* permits allowances to children over 14 years of age who are physically incapacitated or are at school. The allowance under the latter regulation must not exceed the difference between the State separation allowance paid in respect of the family and that which would be payable if the child was under 14.

Regulations 7 (1) (e) and 7 (1) (f).—These regulations are the complements of Regulations 9 (a) and 9 (b)—*see* below—and are only necessary to preserve the technical distinction between supplementary and special allowances.

Regulation 7 (1) (g).—This is a special regulation, under which allowances may be given in naval cases to adjust differences between naval and army rates of allowances.

Regulation 7 (2).—In addition to an allowance under 7 (1) (a) or 7 (1) (b), a wife or dependant may be granted a further allowance, not exceeding 10*s.* a week, under Regulation 7 (2), if there is a serious difference between her present financial position and her income before the war. The basis of comparison in this regulation is, however, the position before the outbreak of war.

Special Separation Allowances.

Regulation 8 (a).—Allowances to persons dependent before enlistment, but who are ineligible for State separation allowance, on the ground only that an allowance is being paid to a person having a prior claim. The usual case is the parent of a married man, the wife's claim being a bar to an allowance to the parent. The allowance granted must not exceed the maximum State separation allowance payable to the dependants of a private soldier, *i.e.*, 12*s.* 6*d.* for one dependant, 17*s.* 6*d.* for two dependants, £1 1*s.* 0*d.* for three dependants, and 2*s.* for each additional dependant.

Regulation 8 (b).—Similar provision in the case of dependent illegitimate children limited to 5s. a week.

Regulation 8 (c).—Allowances in certain circumstances to illegitimate children born after enlistment, also limited to 5s. a week.

Regulation 9 (a).—Allowances to parents or other dependants who have become dependent since enlistment, owing to the death or incapacity of the breadwinner of the household. Maximum allowance, as in 8 (a).

Regulation 9 (b).—Allowances to parents of men who at the time of enlistment were apprentices or students. Maximum allowance, as in 8 (a).

Before an allowance can be given under this regulation, the applicant must show that the allowance is necessary for the due upkeep of the home.

Regulation 9 (c).—Allowances to persons whose dependence had been suspended for some good and sufficient reason for a period before enlistment, and who, consequently, have no claim to State separation allowance.

Maximum allowance, as in 8 (a).

Regulations 10 (a) and 10 (b).—These regulations provide for allowances to persons who have charge of the home and children of a man who is a widower or whose wife has become insane or has left him.

The allowance must not exceed the difference between the State separation allowance payable in respect of the children and that which would have been paid if the guardian of the children were the wife.

Advances.

Regulation 6.—This regulation authorises advances to persons in respect of separation allowance and pension due to them.

In addition to the foregoing regulations there are :—

(a) *Temporary allowances*—Regulation 11—which are included in Part II. for administrative convenience. Under this regulation allowances may be given pending the decision of the Special Grants Committee on applications under Part I. of the Regulations.

(b) *Emergency grants*—Regulation 13.—These are not dependent on disproportion of income, and are intended to meet purely temporary emergencies.

Regulation 12 (a).—A general regulation under which the Special Grants Committee may, in an exceptional case, grant an allowance, although the case is not covered by a specific regulation.

Regulation 13 (a).—*Sickness grants* ordinarily limited to 5s. a week and a period of thirteen weeks, but in special cases limits may be extended to 10s. a week and a maximum period of 26 weeks.

Grants may be made to :—

Wives, children and other dependants.

Widows and children of deceased men.

Discharged disabled men pending settlement of his claim to pension.

Regulation 13 (b).—Grants towards *funeral expenses* limited to £4 for an adult and £2 for a child.

Regulation 13 (c).—Grants not exceeding £2 towards expenses of outfit, &c., on boarding out of children.

Regulation 13 (e).—Grants not exceeding £3 to a dependant to meet urgent and necessary expenses caused by the death of a sailor or soldier.

Regulation 13 (f).—Grants not exceeding £5 to a discharged disabled soldier, for expenses incidental to obtaining treatment or employment and for other purposes.

Regulation 13 (h).—Grants not exceeding 10s. a week and £2 in all to wives of sailors and soldiers in maternity cases.

Grants in emergencies not specifically provided for above must not exceed £2, or be given for a longer period than four weeks without special sanction.

It will be noted that while Part II. deals almost entirely with wives and dependants of serving men, there are included, for convenience, provision for advances against pension, temporary allowances, and some emergency grants to widows and dependants of deceased men and to discharged disabled soldiers.

THE INSURANCE OF THE DISABLED AGAINST INDUSTRIAL ACCIDENTS.

By Advocate FOSCOLO BARGONI—Rome.

The National Institute of Insurance for workmen disabled by accident during the performance of their duties, foresaw that in the near future they must be prepared to deal with the problem of men, partially disabled in the war, resuming their pre-war occupations.

Taking all things into consideration, the facts are as follows:—

It is at once seen that the legal position of those disabled in the war, as far as it concerns the application of the law for dealing with cases of accidents met with in the performance of their civil occupations, must be perfectly conformable to all alike, no matter if affected by imperfection, illness or disablement; if they be congenital, or caused by effect of infirmity or accident.

In the doctrinal and jurisprudential elaboration of the matter, in this regard are assured a few principles that can be held now not subject to ulterior discussion; there are:—

- (a) That workmen affected by imperfections or infirmities cannot be excluded from the enjoyment of the benefits of the law for accidents nor can they be refused the insurance.
- (b) That in the valuation of the effects of the damage derived from an accident no account must be taken of infirmity or injury existing before the accident itself, in order to limit the indemnification to the direct consequences immediate and exclusive of the injuries caused by the accident, independent of the pre-existing state; but the indemnity must be proportioned to the effective inability caused to the workman, struck by accident, by the co-existence of the various injuries, or better to the inability really caused by the accident to the workman, in regard to his productive value at the moment of the accident, and not to the damage which an equal injury would have been able to produce on a workman completely healthy.
- (c) That of the minor defensive capacity against the probabilities of accident of the invalids and mutilated, and of the greater damage caused by whatever accident to workmen already partially disabled from work by illness or imperfections, one cannot hold it in account, except as one of the various elements of the risk estimable either at the moment of the emission of the policy or in course of contract as coefficient of the aggravation of the same risk in the case of successive assumptions to the work.

The rule for the premiums and indemnities of the National Bank of Insurance for disabled, approved by the Royal Decree of the 15th April, 1915, No. 612 (published in the Official Gazette, 17th May, 1915, No. 121), had already sanctioned these principles, disposing that collective insurance ought to comprehend all the workmen engaged in the industry, enterprise or establishment named in the policy; that no workman can be excluded from the insurance contract either on the part of the enterprise taking the contract, or on the part of the National Bank of Insurance,⁽¹⁾ that the said Institute in the stipulation for each contract should take into account all the effects that have an influence on the qualification and on the valuation of the risk, and proportion the premium to this,⁽²⁾ and establishing the means and limits of the faculty for proportionally augmenting the amount of the premium in the case of the employment in great proportion of workpeople whose personal conditions aggravate the risks (old people, boys, women, *persons affected by pre-existing infirmities, &c.*).⁽³⁾

(1) Art. 3.—Collective Insurance, combined or simple, should embrace all workmen employed in the industry, enterprise or establishment named in the policy.

In special cases, for just motives the National Bank of Insurance may deviate from this rule. By workmen is meant all persons considered such by the law of March 17th, 1898, June 29th, 1903, Art. 2 and 21 law, 124 Rule.

(2) and (3) Art. 12.—The National Bank of Insurance cannot refuse Insurance when this regards enterprises, industries and constructions for which the law imposes the obligation of Insurance, no workman can be excluded from the contract either on the part of the enterprise taking the Insurance or on the part of the National Bank of Insurance.

The said Institute in the stipulation for each contract must take into account all the coefficients that influence on the qualification and valuation of the risk and to this proportion the amount of the premium according to the rules for the application of the tariff and according to the just means of graduation and correlativeness of the premium to the risk, and with the faculties indicated in the following articles.

Art. 13.—A greater premium than that assigned by the correspondent article of the tariff will be applied besides that in the cases already seen in the notes to the different articles, even when for other reasons an increase of the normal risk results, as for example: for the use of dangerous instruments or machines, execution of works on bridges, scaffoldings or other posts from which a fall is probable, enterprises lying in a difficult or dangerous locality, treatment of explosive material, of inflammable, corrosive or poisonous substances, execution of works, in notable measure, during the night, or in the form of work executed by contract, employment in great proportion of workers in personal conditions to aggravate the risk (old persons, boys, women, persons afflicted with pre-existing infirmities), precariousness and urgency of the works, the confirmation of the persistent abnormal frequency of accidents in the two complete years preceding the date of the proposal for Insurance.

A lesser premium will instead be applied than that assigned in the tariff when for efficacious means adopted for the prevention of accidents, for the material and technical conditions of execution or for those personal ones of the work power employed, the enterprise, industry or construction presents elements and conditions of attenuation of the normal risk.

The amount of the premium can be augmented as far as the greatest limit of the five classes immediately superior to the article which corresponds to the industry, enterprise or construction to be insured provided that with such increases, the double of the amount yielded by the article of the tariff is not exceeded.

For the application of a rise of premium above the said limit a motived deliberation of the Executive Committee of the National Bank for Disabled will be necessary, which must be approved by the Board of Agriculture, Industry and Commerce.

In consequence, the Direction of the Institute has given the following rules, in a circular addressed to all the seats of the Institute, September 25th, 1916 (No. 708—140), and thus understood:—

In consequence of certain demands formulated to this General Direction with regard to the insurance against accidents of workmen partially disabled by war, we maintain it is necessary to remember that the legal position of war invalids, as far as it concerns the application of the law for accidents in work, cannot be considered in anyway different from that of workmen affected by pre-existing imperfections or injuries, be they congenital or acquired by effect of infirmity or accident.

These workmen, truly, cannot be excluded from the benefits of the Insurance prescribed by the law, and the Insurance Institute has solely the faculty of taking in account their physical condition as one of the various elements of risk, valuable either at the moment of the emission of the policy or in course of contract as coefficient of the aggravation of the risk itself in the case of successive assumptions to the work.

(Articles 1 and 2 of the law for Accidents; Articles 67 and 71 of the relative rule; Articles 3, 12 and 13 of the Rule for Premiums and Indemnities.)

The weight of this greater risk must be valued, as a means of determining the premium, by each case, according to the nature, importance and the conditions in the exercise of the industry to be insured, and according to the number of workmen, partially disabled, undertaking the work and the kind and grade of inability that the workmen present, had likewise regard to the remaining skill, generical or specific, for work, and the major or minor grade of re-education that they have already obtained.

These are the chief maxims on the base of which should be treated the insurance of partially disabled or mutilated workmen, even if the partial disablement or mutilation finds its efficient cause in the war.

“ But in the intention of the Executive Committee of our Institute to carry out a highly patriotic work, and in relation to the ends that our Institute propose, the determination has come to facilitate in the best way possible the insurance of the workmen who remain partially disabled or mutilated by the war.

“ We, however, where the proposals for insurance for workmen partially disabled or mutilated by the war are presented, must renounce the greater premium, that by existing dispositions must be paid for the insurance of the workmen in general who are not in their best working capacity, seeking to facilitate also by this means the occupation of many workmen partially disabled from work by the great National Cause.

“ Such facilitation will be consented to, when the number of war invalids does not constitute too great a risk for the importance of the enterprise, or their employment does not represent a

less correct speculation. In doubtful cases you must have recourse to this General Direction."

In conformity with present instructions you will give opportune dispositions to the dependent offices, informing at the fitting moment this central seat of all the insurances agreed to, in which have been comprised workmen invalidated or mutilated by the war.

Meanwhile the Government had presented to the Chamber of Deputies (June 6th, 1916) a Bill for the forming of an institute named "National Work for War Invalids" directed to the protection and assistance of invalids from the war.

In the proposed Bill was foreseen, regulated, and even enjoined within certain limits, the re-admission to work of invalids and mutilated by war, but no disposition was formulated for the treatment of the invalids in case of accident.

The Parliamentary Commission charged with the examination of such law designs foresaw the question and deliberated how to decide it with methods of equity and justice, observing above all the principles already acquired in the long doctrinal and legal elaboration of the subject matter, for which they propose an analogical question to the National Bank of Insurance.

The gravest technical legal questions relative to the insurance against accidents of the disabled by war were thus again taken in profounder and weightier examination, and the results of the new study by the National Institute of Insurance for Accidents were sent to the Commission reassumed in a relation thus understood:—

"As a necessary element of judgment are held present the three categories in which can be reckoned the invalids of the war, that is:—(a) war pensioners, (b) workmen* disabled in work by risks in war, and indemnified according to the law for accidents or special provisions, (c) workmen disabled by the same risk, out of work, and, of course, not indemnified. Others have observed that if the system of a reduction proportional to the indemnity for future accident must be adopted the treatment ought to be special for each one of the said categories. But for the reasons that will be afterwards exposed, against the system mentioned, this disparity of treatment should not effectively take place.

As a second element of investigation should be held present the amount of the recompense attributed by the law on pensions to soldiers disabled by war, to the effects to estimate, always in the hypothesis of an eventual detraction to be taken from the ordinary indemnity from accident, of the coefficient of the indemnity responding to the conceded pension, as in the greater number of cases (and, above all, for the trades the lowest in industry and for all agricultural works) the grade of specific incapacity in military service—that is, that placed on the base of the *régime* of pensions—corresponds to the grade of generical incapacity for work, and as the measure of the said pensions is generally in a large way compensative.

With regard to the provisions which are in project, whose purport can be decisive as far as regards the insurance *régime*, from the especial point of view of the insurance institute, two correlative principles are, it seems, by nature fundamental, to which are informed the dispositions here afterwards transcribed from the law (Salandra) for the protection and assistance of the disabled in war, presented to the Chamber of Deputies by the President of the Council and Minister for Home Affairs, and these are—that for the obligatory reassumption of disabled workmen into the establishment to which they before belonged and that by which is left to the whole charge of the industry the burden of this greater risk by means of a super-premium in respect of the ordinary tariff that the Insurance Institute has the right to ask for:

Article 8.—Disabled, re-educated to the professions, that find themselves in the conditions indicated in the Article 1 and 10 in the Decree of May 1st, 1916, N. 490, have the right to be reassumed into the enterprises which are comprised in Article 1 of the Decree itself, provided they make the demand to the representatives of the establishment inside a month from the conclusion of their re-education, and not outside a year from the cessation of the state of war, and provided from the certificate of the Sanitary College of the National Work results that they have reacquired the capacity to render useful service in the post they first occupied.

Article 11 series.—For the insurance against accidents in work of the disabled in war, re-employed in whatever undertaking shall be exacted a super-premium from the Insurance Institutes in the measure to be fixed and with the rules that shall be established in explanation of the last comma of the Article 1 of the present law.

To such a view, even exorbiting in its completeness the limits of the present investigation, the question on the opportunity of re-education of the disabled to the trade by them already exercised, and considering transcendently how much more opportune it would be, to this effect, provisions by which the disabled workmen should be set to less dangerous works, in accordance with his remaining capacity, it is also considered necessary to bring into relief that this return to former work constitutes not only from the social point of view, having regard to the value of the safety of the worker, but especially from the point of view of insurance, a very grave coefficient of risk, of which it does not seem possible not to take serious account.

Nevertheless, it does not seem possible that, in face of the fundamental conception, that the mass of the premiums should equivaue the mass of the indemnity, the Insurance Institute should neglect this grave element of risk, and should observe as a general rule the application of the ordinary tariff, except small increases, deliberately each time with wise and discreet methods.

The idea to accumulate the war pensions with the eventual indemnity for accidents finds its fundamental base in etico-social

reasons, that attribute to the pensions—as for an obligation of gratitude of the nation towards the victims of duty—the character of a reward that does not permit to other ends a future valuation of economic character which would place the indemnified for war in an inferior condition in respect to all other workmen insurable. Nor does it seem that to this idea can prevail probable but not lasting pre-occupation for the charge that the industry may feel.

From a positive point of view, it serves to remember a disposition of our law on pensions, which admits that the pensioner, for wounds received in service, can return to lend his work in favour of the State without it being necessary in the new recompense to hold in account the already assigned pension (Article 179, last comma of the sole text, 1895).

And in Germany the relative law on military pensions explicitly admits the accumulation of military pensions, with that for accident or invalidity deriving from work.

In France, also, during the actual state of war, already a first law project had admitted, only in part, the accumulation of the war pension with the indemnity for accident (only the quota charged to the State was subject to detraction, that due from industrials resting invariable); but afterwards, and notwithstanding the provisions on the grave consequences to the industry and to the State, for the compensation of accidents of invalids of the war, the Ministerial Commission charged with the examination of the project, has rejected the said idea, adopting in the new Honorat project the idea of perfect accumulation by means of the sanction of the principle of master solidarity for the quota regarding the aggravation of the risk relative to the invalidity by cause of war.

From a practical point of view it is not inopportune to bring into relief that the smallest Italian military pension of third category, being 600 francs per year (that, if capitalised at 5 per cent., amounts to the sum of 12,000 francs), if one proceeds to the detraction above named, in the cases of the indemnity for accidents nothing would be due arriving such a sum at the maximum of the indemnity established by the Italian law for disabled in force.

In abundance can be added, that in the actual state of our legislation, the legal position of invalids from war, for what concerns the application, in their regard of the law for accidents in work cannot, especially by our Institute, be considered different from that of the workmen affected by imperfections or injuries, pre-existing to the accident, be they congenital, or acquired by the effect of infirmity or accident.

These workmen cannot, nevertheless, be excluded from the Insurance, and the Insuring Institute can only hold count of their physical condition, as one of the various elements of risk valuable either at the moment of the emission of the policy or as

coefficient of aggravation of the same risk in course of contract in the case of successive assumptions to the work.

The proposal to assume the new risk that will present itself in the field of Insurance for workmen, without increase of the normal taxes of premium, corresponds, without doubt, to high beneficial ends and for what regards the National Bank for Accidents to a high conception of the mission of this Institute. But admitted the principle, it does not seem possible—as already mentioned—to proceed by way of imitation, case by case, because, indefinite, one would violate the principle itself.

On the other hand, it seems one must also observe that for the Insurance Institute, the valuation of the risk for each case would not be prudent (that is in respect to each policy), because it may appear light, whilst instead, in the great total of invalid workmen admitted to work in each establishment, taken altogether, the risk, as is easy to foresee, would become at once enormous.

At any rate for what concerns our Institute the preventative examination seems to be imposed—if only in the way of approximation—for all the risk in its entirety with the aim to see how much the normal tariff can consent to support.

Moving, therefore, from the idea of practical opportunity and necessity, without even considering a resolution of the other questions of general character exorbitant of the present examination, we have come to the conclusion that to our Institute, even taking away its exclusive interests, it convenes to propose the idea—

- (a) that all workmen disabled by war should enjoy entire indemnity for accident;
- (b) that Insurance should be made, if possible, without a too heavy weight for the industrials, that is, with a proportional increase of the tariff in force, of the National Bank for the Disabled;
- (c) that, finally, to render the said superpremium the least heavy possible, would be opportune the study of a special technico-administrative method, of reassicurative obligatorial type, trusted to one Institute—that could be ours—but this in such a case should be in some way guaranteed for as much as regards the direct proper insurance of disabled workmen.

The Parliamentary Commission in the relation presented to the Chamber of Deputies, November 24th, 1916, affirmed that it is to be desired that a good number of war invalids can, their re-education completed, and completely furnished with necessary apparatus, return to work, added that in the projected law of assistance for invalids should not be wanting dispositions that impose and regulate their insurance against accidents in work.

It added besides that the National Bank of Insurance for the accidents of workmen in their work, with a large mind, had understood the problem, presenting to the Commission that had

consulted it, satisfying and very definite conclusions, that the Commission had translated in an added article to the text of the law agreed upon between the Government and Commission and presented to the Chamber together with the relation of the Commission. (*)

The article proposed was with slight modification of form approved by the two parties in Parliament, becoming the Article 22 of the law, March 25th, 1917, N. 481 (published in the Official Gazette of April 2nd, 1917, N. 77) thus understood :—

“The insurance against accidents in work of the disabled in war, re-employed in whatever undertaking, will be obligatorily assumed by the insuring Institute and of the employment of the invalids themselves. Account can be taken only when they super a certain number, as an element for the valuation of the risk for which insurance is asked, and that with the rules that will be established in the application of the last comma of the Article I of the present law.”

For the compiling of the rules in the latter part of the article just stated, the National Bank of Insurance was again interrogated, and more precisely their opinion was asked about the limits for the application of the increase of the premium and about the proportion of the increase itself.

On the first point the opinion is that, as judgment very wide and equitable, that would have notably facilitated the readmission of disabled and invalids of the war to work, the right on the part of the insuring Institute to demand an increase in the amount of the premium, ought to limit itself to the case in which the number of mutilated and invalided assumed to work super the 10 per cent. of the total number of the workmen dependent on the industrial establishment or undertaking insured for the works to which the mutilated and invalided themselves were addicted.

On the second point it was observed that it was exceedingly difficult to fix a unique general judgment, each case being variable in the gavity of the risk, either for the measure of the invalidity or the kind of mutilation, or the grade of the professional re-education acquired, by each of the invalids re-admitted to work, or finally for every species of industry and for the kind of work to which the invalids are addicted, nevertheless it is proposed to remand, until after the accomplishing of more extensive and particular studies, the determination of the proportional increase of the premium in case of assumption to work of disabled in war other than the proportion above indicated.

* Art. 28 of the text agreed upon by the Commission and Government :—

The insurance against accidents in work of the disabled in war, re-employed in whatever enterprise, will be obligatorily assumed by the Insurance Institutes, and only for the employment of the invalids themselves ; when they super a certain limit, it can be taken into account as an element for the valuation of the risk for which is asked insurance, and that with the rules that will be established in application of the last comma of Art. I. of the present law.

These conceptions of the Bank were accepted and found application in the Article 77 in the Rule of June 25th, 1158 for the execution of the before-said law, and thus understood:

“The institutes that exercise insurance against accidents in work in the terms of the law (Sole Text) January 31st, 1904, N. 51, and of the Rule, March 18th, 1904, N. 141, ought in the relative contract (without exception) insure all the workmen indistinctly occupied in the undertaking or in the industry comprising the disable by war.”

This will come, without doubt, in regard to those addicted to agricultural works, for the insurance of which, according to the dispositions of the Decree Law, April 23rd, 1917, N. 1450, the premium will be represented by contributions constituting additional shares of the Treasury imposts on the rustic funds, without in any way being able to influence the amassing of the premium itself, the number and the personal conditions of the workers insured.

On the second point, that is to say, on the dispositions of the increase of the amount of the premium, it is observed that it was exceedingly difficult to fix a unique general judgment, each case being very variable in the gravity of the risk, either for the measure of the invalidity or the kind of mutilation, either for the grade of the professional re-education acquired by each of the invalids re-admitted to work or finally for every kind of industry and for the kind of work to which the invalids are addicted; nevertheless, it is proposed to remand, until after the accomplishing of more extensive and particular studies, the determination of the proportional increase of the premium in case of assumption to work of disabled in war, other than the proportion fixed by the law. These conceptions of the Bank were accepted and found application in the Article 77 in the Rule of June 25th, N. 1158, for the execution of the law before said and thus understood.

The institutes that exercise insurance against accident in work in the terms of the law against accidents in work in the terms of the law (Sole Text) January 31st, 1904, N. 51, and of the Rule March 18th, 1904, N. 141, ought in the relative contracts (without exception) insure all the workmen indistinctly occupied in the undertaking or in the industry, comprising the disabled by war.

It is forbidden to the insuring institutes to demand super-premiums to apply individually to the disabled by war, only when the number of these is above 10 per cent. of the occupied in the industrial establishment or in the enterprise for which the insurance must be stipulated, the Institute can increase, in the proportion and with the rules that will be established with the decree of the Minister of Industry, Commerce and Work, the tax of the premium applicable to the establishment or to the enterprise.

The National Bank of Insurance for accidents to workmen in work, in establishing the increase of the premium for the insurance of invalids of the war, in the case foreseen in the pre-

ceding comma, a stop must be made at the rule, and observation made of the limits established by the Article 13 of the rule for premiums and indemnities approved by the R. Decree, April 15th, 1916, N. 612.*

The heads or directors, masters of the enterprises, industries or constructions that occupy invalids of war, should make a nominative denouncement of each, to the insuring institute, in the proposal for insurance, or, if the invalids are taken by them after the stipulation of the contract, within three days from that of the assumption of each one.

After the publication of the presaid Rule, the General Direction of the National Bank for Accidents maintains it ought to impart new instructions to its own compartmental seats, specifying on a large scale the ideas that they should follow in regard to the insurance of workmen partially disabled in war and more precisely of the invalids of war, made in circular September 19th, 1917, N. 2674/175, thus understood :

“ It is in the habits of some of the compartmental seats to apply a fixed individual super-premium for every workman insured who has passed 65 years of age or affected with pre-existing infirmity.”

It wants little to show that such proceedings are arbitrary and in open contrast with the precise dispositions of the Rule in force for premiums and of the indemnity approved with the R. Decree, April 15th, 1915.

In fact the Article 13 of the Rule disposes that “ A greater premium will be applied than that assigned by the corresponding article of the tariff, other than in the cases foreseen in the note to the single articles, even when an increase on the normal risk results for other reasons, as for example for . . . employment in great proportion of workmen in personal condition to aggravate the risk (old people, boys, women, persons afflicted, with pre-existing infirmities.

The Rule does not fix the limits of this “ *great proportion*,” and not even the means to determine them; this leaves, therefore, a not indifferent liberty of appraisal for the determination of cases in which should be held verified the aggravement of the risk, and because in the valuation of the risk, various concurrent elements should be pondered, as, the kind of work to which old people and the invalids are addicted, the major or minor quantity of the conditions lessening the capacity for work (advanced age, great infirmity), the complex number of the workmen addicted to the same work, &c., there is no doubt that even the assumption of a single workman can sometimes constitute that aggravation of the risk that gives the right to our institute to increase the premium fixed by the tariff.

It is equally evident that the liberty of appraising the faculty of valuation of the risk belong exclusively to the Insurance

* See Art. 13 of the rules for premiums and indemnities of the National Bank for Accidents, reported in note, page 3.

Institute, which can with good right exact that, to them shall be announced the assumption of every workman in condition of minor working capacity, to be able, when they believe to exist conditions of work in great proportion, augment the premium for insurance, but it cannot be allowed them to apply the super-premium fixed for every old workman or partially disabled assumed to the work.

The Executive Committee took the question in examination, valuing the reasons above exposed, it has therefore deliberated that the system of the application of the super-premium fixed should not be ulteriorly followed, but that once in a while, together with other elements characterising the risk and furnished with the proposal, can also be calculated the declarations of assumption of old workmen or of partially disabled, to fix the tax of the premium, that can be varied in course of the contract if the conditions of the risk change, even in relation to the personal conditions of the workmen assumed to work.

For as much as it refers to the Insurance of the workmen invalided or mutilated by the war, following the instructions already given by the circular N. 708/140, dated September 25th, 1916, it is necessary that the Seats hold present the special dispositions contained in the Law March 25th, 1917, N. 481, on the protection and assistance of the invalids of the war and in the relative Rule approved with the Decree of June 28th, 1917, N. 1158, and more precisely that of the Articles 22 of the said law and 77 of the relative Law.

In conformity with what has been said in the said circular, the Seats, by analogous deliberation of the Executive Committee, will in the application of the dispositions above said, inspire themselves with means of the largest facility, so that, the occupation of the workmen remaining partially disabled from work by the great national cause, have not, at least on the part of our Institute, to encounter difficulties in practices relative to the Insurance against accidents.

Reassuming the National Italian Bank of Insurance for Accidents of workmen in work can legitimately enumerate amongst its proper merits towards the country, that one to have contributed and in a notable measure, that the law for the protection of the invalids of the war and the relative Rule should have prevised and regulated, with methods of the major largeness and equity, the treatment, in case of accident of the invalids of war readmitted to work, either securing to the invalids and mutilated treatment equal to all workmen, without that no calculation can be held of the personal incapacity to work and of the consequent government pension, to diminish the indemnity for accident or rendering to the enterprisers and to the industrials, absolutely not grave, from the point of view of the Insurance against accidents, the assuming to work of the invalids and mutilated by war.

Limiting in fact the faculty of the Insuring Institute to which is imposed the peremptory obligatory to insure against accidents the invalids and mutilated, to ask for an increase of the amount

of the premium for the Insurance itself, in the sole chance, that the number of invalids and mutilated are above the 10 per cent. of the total number of the workmen, a chance which is verified rarely, the increase of risk for accidents is thrown entirely on the insuring Institute and more especially on the National Bank for Accidents, which limits its action to this field of social insurance, that is held by law, to accept indistinctly all the proposals that are presented to them and which actually between Insurances direct, and reinsurances, covers with the accident risk more than two-thirds of the workmen of the Kingdom.

What can be said, when before long will come into rigor the Decree Law, April 23rd, 1917, N. 1460, for the obligatory insurance against accidents in work in agriculture?

The Article 4 of the said Decree Law disposes that the administration of the insurance of the accidents in agricultural work is temporarily entrusted to the National Bank of Insurance for Accidents of workmen in work, and as it is known about 65 per cent. of the invalids and mutilated in war are from the agricultural class.

Now the premium being for such insurance constituted from contributions additional to the agricultural imposts, in base of the extension of land and of the kind of cultivation of the same, without any regard to the number and to the personal conditions of the insured worker it is evident that, in no case, can be taken into calculation in the determination of the premium, for each proprietor insured, the fact that he has depending on him invalids or mutilated by war.

INTERNATIONAL PROTECTION FOR DISABLED SOLDIERS AND SAILORS.

BY LIEUT.-COLONEL G. LAGHEZZA, Commissary, Italian Royal Navy.

The question of the protection of disabled soldiers and sailors, taken as a whole to be put into effect not only by the Governments of the Allied Countries, but through the generous initiative of private individuals as well—in order to aid all those who are now, and will continue to be for several generations to come, the living symbols of the horrors of this war—has remained, up to now, an exclusively domestic question in the opinion of the majority of even the most far-seeing thinkers. All the work for the welfare of the disabled men that has been accomplished up to the present has been limited to each nation's citizens, and has not gone further than the territorial frontiers of the different States. Even during the discussions which took place at the Paris Conference of last year—a Conference that had been entrusted with the study of the various questions relative to the disabled men—it seems that this question retained throughout the characteristics mentioned above, and this in spite of the very important resolution that was voted in full sitting, the text of which was: “Que les Alliés fassent le plus possible de conventions tendant à fixer le régime à attribuer aux invalides de la guerre, afin que ceux-ci puissent trouver aide, protection et secours au même titre que les autoctones, dans le pays où ils exercent, même temporairement, leur profession.” In fact, the principal aim of this Conference was to bring to the knowledge of the delegates of the different nations, by means of a mutual exchange of views and experiences, the results of the studies, of the discussions and of the experiments which had been obtained in the various countries; and, by a comparative examination of these same results, deduct such conclusions as would cause all future action to be more compact and efficacious.

Of what importance, if any, would be the study of the protection of disabled men outside their national territory, and what would be the attitude to be assumed as regards this protection with reference to international relations, are questions that have never been examined; and it is doubtless due to this that the Governments, and the thinkers themselves, have apparently given so little thought to the above-mentioned resolution of the Paris Conference.

Doubtless, the complete absence of any form of emigration from country to country has contributed to this neglect; also the fact that, with the persisting of the horrors of war, it is much more vital to provide medical assistance and proper sanitation for the wounded and sick that are daily increasing in number.

The question of the protection of disabled men in foreign countries appeared, therefore, a very remote contingency, which does not belong to the present hour.

But this conclusion was probably not reached without the concurrence of an essentially erroneous idea, and that is, that the protection of disabled men beyond the limits of their native territory having become, through the absence of all emigration, a problem for solution at the end of the war, when, after the declaration of peace, it will become one of the essential tasks of each nation, and that probably by that time it would not be to the interest of the disabled men to abandon the advantages assured to them in their own country, in order to seek adventure in a foreign land. This is, however, an erroneous idea, as I have said, when one considers the great number of those who, in order to fulfil their military duties, were obliged to return to their native country from abroad, and that, once these duties fulfilled, will be obliged to return to the country they came from, so as to be reunited with their families, to retake possession of their properties, to find themselves once again in the business circles they had left behind them. The same may be said for those others who will feel called upon to emigrate to foreign lands, so as to accompany their own people who are going abroad for the first time. In such cases, the protection of the disabled men can cover a vast field, consisting not only in the medical and economical assistance, which for the moment is the most urgent, but also in the moral and intimate assistance for obtaining work, which, as such, cannot end with the recovery of the disabled man, and his being in the condition of earning his living, or of dragging along his existence in one way or another, but it must accompany him through life, so as to act as a safeguard and a comfort to him. "It will be especially after the conclusion of peace," was justly said, "that the disabled men will have the greatest need of help and support."

One of the principal tasks which would pertain to protection—that of re-employment—would be a task for after the war in the majority of cases. Functional and professional training, and in a few instances after care as well, would all come within the orbit of protective work to be accomplished when the war is over. In the first days of peace this protection will be needed not only by those wounded in the last battles, and the prisoners of war who are gradually being sent home, but also by those men who, through wounds or sickness contracted whilst in the Army, are unable to stand the fatigue of war, and yet have been retained in the Service, where their duties are by no means light, and who, at the end of the war, will not be able to return to their pre-war occupations. Nor can those others be

neglected who, although having already undergone a complete course of training, are compelled to go through a further period of training, the learning of a new trade or profession having become necessary as a result of accident or some other misfortune.

There being every indication that the protection of disabled soldiers and sailors will become a permanent institution, and there being a forecast of a big emigration at the end of the war, the systematising of the questions regarding the international protection of disabled men is most necessary, and ought not to be put off any longer: every effort should be made towards the solution of the problem before the events cause it to become of too great an urgency and preoccupation.

It is evident, meanwhile, that the whole problem touching upon the question of the international protection of disabled soldiers and sailors, contains two lesser problems that refer to details: (1) Will the State of origin and the national protective institutions be held to extend their protection of disabled men, on the latter electing to reside in foreign countries, and, if so, how could it be done in practice; (2) would the countries of immigration be held to co-operate in this protection, and, if so, within what limits, and how could it be done in practice?

The solution of the first problem is fairly simple, and, therefore, does not entail any lengthy discourse, as it can only be based on the following conception: that, in so far as they can be practically carried out, the State of origin and the private national protective institutions will be held responsible for the fulfilment abroad of all obligations contracted by them towards disabled men prior to the latter's emigration. The obligation of protection, once admitted, cannot be repudiated because the person entitled to said protection takes a step that is perfectly normal, and that he has a right to take, such as transferring his residence to a foreign country for legitimate reasons. This is important, especially with regard to pensions, subsidies and other financial aid; it seems evident, therefore, that the burden of these aids should continue to be borne by the country of origin; nor could it be admitted, or pretended, that this burden should be taken over by the State wherein the disabled man has actually elected to reside. In this respect the only dispute that might arise would be regarding the modalities of said fulfilment, and on the subject of a few of these we shall speak further on.

On the other hand, it is much less easy to define the attitude and the limits of the co-operation in the protection of disabled men by the State wherein he has elected to actually reside. This task is all the more difficult by reason of the necessity of examining, before anything else, the status of the various institutions and the texts of the laws enacted for the protection of disabled men that exist in each State. And not only this, but, as will be seen, there must be the further enquiry into whether or not they can be applied to disabled men in their quality of strangers. In the second place, the difficulty increases because

of the nearly total absence of adequate national and international legislation on emigration and on labour in foreign countries; had these laws existed, they could have served as a basis for the adapting of regulations concerning the special emigration and the special labour in foreign countries of disabled soldiers and sailors. The duty of all Governments to carry out national or international assistance does not date only from the war, as has been so justly remarked. This is a duty that is inherent to social organisations, and it must be truthfully admitted that much has been done in this respect by the Germans. What is especially noteworthy is the practical and immediate use which that country has been enabled to make of all the State's benefits instituted since long before the war, particularly as regards the professional training of workmen who have been disabled by accidents that occurred when they were at work. Whilst in other countries hardly anything has been done in this respect, except in a few noteworthy cases, and as a result the entire system of protection for disabled soldiers and sailors has had to be initiated from the very beginning.

Under these conditions, given the deplorable neglect, of which the majority of Governments have been guilty up to present, of all that has reference to the assistance to be given to foreigners, this Conference has been called together in order to discuss this grave problem, with a view of arriving at a satisfactory solution. However, whatever adequately practical regulations for this international protection may result from the perusal of this explanation and the debate that will follow, it were well to make the affirmation here, as a preamble to the study of this subject, that it is the duty of all the Allied Governments to co-operate most generously and with the greatest possible solidarity to the protection itself. This solidarity is dictated by practical necessity, for otherwise, in view of the organisation of official representation and the authority, as a whole, of each Government abroad, the protection of disabled men outside their own country, if effected by means of the said organisation and within the limits of the said authority, would become *de facto* impossible of realisation as regards its most notable characteristics, and it would probably be reduced to a mere form of financial assistance that would be subject to all sorts of complications and encumbrances, that in any case would be inevitable. But, above all, this rightful solidarity would be in complete harmony with the nature of the present struggle of the Allies against the common enemy. In this crusade of the entire world in defence of the liberties and the nationality of peoples, the soldier's nationality has nearly lost all importance, having been swallowed up in the communion of the great cause. The different fighting armies are, in reality, but parts of one big army, and each soldier a soldier of the collective mass. The disabled soldiers and sailors of the different Allied countries are not, nor ought they be, strangers to each other. And by carrying round the world the signs of the common martyrdom, they become the sacred emblem of a solidarity that, with time, will be greater than that of arms. Side by side with the principle of the duty incumbent on each

Government, of protecting their own disabled soldiers and sailors, must be placed the principle of the same duty towards these men, that is incumbent on all the Allied people.

Now the practical form to be given to the carrying out of this international duty by the Allied Nations can only be based on the following broad programme of measures to be adopted :—

- (a) The direct providing for the elimination from the different legislations, and from the local public opinion, of all prejudiced regulations and of all hostility towards the disabled foreigner, inasmuch as he is a foreigner ;
- (b) the assistance to be given by the country of residence to the country of origin as regards the observance of the laws belonging to the latter ;
- (c) the equal treatment of the disabled foreigner with that given to the disabled native in all that is done in favour of the latter as far as being disabled, within the limits, however, of all practical possibilities, and with the exclusion of such measures as are already assured by the protective laws and institutions inherent to the country of origin ;
- (d) special regulations to be drawn up in favour of the disabled foreigner as far as he is a foreigner.

The unfavourable regulations which, given the actual condition of the legislation belonging to the Allied Nations and their Colonies, might strike the disabled man in his quality of foreigner, have reference in a few cases, as is well known, to the liberty of access to the land of immigration, for instance, because of a state of indigency, practical impossibility to earn a living, illiteracy, infirmity, criminal precedents, transfer abroad as a result of propaganda by means of offer or promise of employment of any kind (the Contract Labour Act on Immigration, passed in the United States Congress, February 7th, 1917), or by means of steamer tickets paid for by a third party ; others, to the access, when allowed, or to the abandon of foreign territory after a certain period of residence (so-called taxes of immigration and re-emigration) ; others strike at the liberty of labour or of that of the exercise of professions (prohibition or more or less broad limitation as regards the carrying on of certain liberal professions, the exclusion or limitation to a very small quota in the competition of foreigners in certain labour activities, and more especially with regard to those connected with public administrations, taxes on individual labour, that are levied either directly from the foreign labourer, or indirectly through the factory employing him) ; and finally others, which in reality happen much more rarely, that have even regard to the possibility of enjoying the advantages of public instruction (admission to schools being conditional on the number of places vacant). And side by side with all these restrictions, the tendency in a few countries of increasing them both as to quality and quantity, the distrustful

attitude and struggles on the part of the local labour organisations, and only too often the absolute lack of initiative and interest on the part of the authorities.

Now, whatever may happen as regards the total abolition of all these elements unfavourable to the foreigner in their general relations towards emigration and foreign labour, it is essential that they should disappear in the presence of disabled soldiers and sailors. Remember that by stopping even one of these men it would make it practically nearly impossible for the disabled men belonging to the State where such a regulation was kept in force, to emigrate. This would be the case with the restriction relative to physical unfitness, which could refer to nearly all the disabled men as such, especially if this restriction were applied to the limits at present allowed it by the text of the law. As an example of this, the above-mentioned Immigration Act of the United States may be quoted, wherein access to the territory of the Confederacy is forbidden even to anyone who, "at the time of the medical examination, the doctor entrusted with said examination declares them to be mentally and physically defective, to such an extent that it would constitute for the man examined a hindrance to the possibility of his earning his living."

And the results of such restrictions would be all the more iniquitous from the fact that, as has already been said, the majority of disabled men who will presumably feel obliged to leave their native land at the conclusion of the war will be made up of those who, on the outbreak of hostilities, were already established in the country where the said restriction is in force, and that are attracted back there because they wish to rejoin the families they left behind, and to try to gather up the interrupted thread of their pre-war occupations. To them the prohibition to re-immigrate will come as a bitter mockery of their sacrifice, as a cruel disillusion following the accomplishment of duty, and at the same time it will appear as a reward to the cowards who chose not to abandon their peace-time occupations!

It would seem that the necessity of avoiding these results is fully realised, for there has been a Bill presented in the American Congress which aims at facilitating the return to the United States of the citizens or subjects of the Allied States "who have become inadmissible on account of disabilities received during military service in the war"; it is to be hoped that this Bill will soon become law and be placed on the Statute Book. It would be expedient for the other States who possess the same kind of legislature to do likewise; in the meanwhile, it would appear necessary to extend this same benefit to those disabled men who were not residing abroad prior to their military service in the present war, yet who may have no less urgent reasons for leaving their native land, as, for instance, the transfer of their own families, or the decease of all their relations in their native town or village concurring with the establishment abroad of a near relative.

Together with the doing away of this restriction, it would be also desirable if, as far as the disabled men are in question, the abolition of the other above-mentioned restrictions could be obtained: illiteracy, criminal precedents, indigency, the payment of the journey's ticket by a third party, the "labour contract" clause. The opportuneness of the suppression of the last two causes for prohibition of immigration is all the more easily apparent that there is little probability of their actually being verified; also, the danger deriving from them is in general a negligible quantity; as for the others, nothing appears to be in the way of their suppression.

To begin with, the same considerations apply to illiteracy and to physical unfitness. The illiterate men that have become disabled in this war, and who, especially if residing abroad, went back to their native land to report to the military authorities, are not less deserving than the non-illiterate disabled men of the benefit of readmission to the country of their former residence.

For reasons of justice and of political expediency, it would be fair to also readmit the illiterate men who, having gone back to their country in order to join the Army, were lucky enough not to become disabled. Even for these men such a treatment would be unjustifiably vexatious and sad which prevented them from returning to the land where they probably had left all their possessions as well as their dear ones, on the termination of their services given in favour of their native country.

Even at the risk of going beyond the strict limits that have been established as regards the scope of this paper and of the work of the Conference, I beg to be allowed to formulate the hope that a clause will be inserted in the laws belonging to those Allied States that eventually forbid immigration to illiterates, making an exception in favour of those who, having been residents of these same countries, had absented themselves to take part in the present conflict.

Besides, this same Act of February 5th, 1917, on immigration into the United States appears to furnish another argument in favour of such an exception, inasmuch as it does not consider illiteracy as an absolute stumbling-block to admission into the States; the efficacy of this cause for non-admission is mitigated by a series of exceptions which are evidently based on reasons of equity and of opportuneness, one of these being, notably, relative to those foreigners who had already been "legitimately admitted into the United States, and had resided there continuously for a fixed period of five years, and returned to the States within six months of the date of their departure." Now, would it be fair and just to treat with greater severity the foreigners who, having fulfilled all the other conditions, absented themselves from the United States not for personal reasons, but for the fulfilment of a duty, unable to state for how long a period they would have to remain absent, and, because of happenings independent of their will, were obliged to stay away from the United States for a period of time exceeding six months?

Also with regard to criminal precedents, or at least for those referring to the period prior to that of the military duties that resulted in disablement, it ought, apparently, not to constitute an obstacle to immigration for disabled men. At all times, and to-day more than ever, when the armies are fighting for a common cause of so sacred a character, and against so vile an enemy, war has proved itself a moral regenerator, and a school for the awakening of consciences. With regard to this, it ought to be remembered that there have been certain proposals made for some changes of a legislative character, in order to mitigate the punishments to which disabled men have been condemned as a result of their having committed crimes of a certain category, and having later behaved in such a manner as to indicate their repentance and reform.

And identical measures ought to be taken with regard to the clause having reference to indigency, all the more so that, in view of the payments of pensions and of other financial subsidies that have been assured to the disabled men by their native Government and by the various protective and private institutions, their coming under the heading of real and proper indigency does not appear either possible or probable.

And for this same reason there ought also to be the suppression of the obligation, established by the laws of certain States, as a condition of permanency in their respective territories, said obligation consisting in finding work within a more or less limited period of time, or the making of a deposit of a certain sum for each member of the family, whether or not capable of working.

And finally, on the desirability of abolishing, with regard to disabled men, all forms of special taxation levied on the foreigner as such, it is not needful to dwell. And I only intend to hint at the further desirability that, at least as regards the disabled men returning to a foreign country, wherein they were established at the time of their recall to arms, and whence they absented themselves exclusively for the purpose of fulfilling their military duties, certain facilities should be extended, as, for instance, immunity from custom duties with regard to luggage and tools.

With these last considerations, that refer much more to the elimination of unfavourable regulations, which, if enforced, would attain the disabled men, than to special facilities extended to their further advantage, we have come within the scope of the other categories of measures to be taken, returning to the subject of international protection of disabled soldiers and sailors, at which we hinted further back, and about which it is time we should speak at greater length.

And, first explaining that it is not possible to deal with each one in detail, or even to simply enumerate them in their totality—a task evidently exceeding the limits of this report, and that would, besides, be nearly impossible, given the progressive character of a few of them—as regards the assistance which the State wherein the disabled man elects to live, to the State of origin for the observance by the latter of their own laws and obligations towards

the disabled man, one of the easiest measures to be put into effect in this respect would be, without any doubt, the payments of the disablement pensions to be made abroad.

If, for the receipt of these payments, it should be indispensable that the disabled man should present himself each time at the nearest Consulate, it would be the cause of grave complications for those residing in districts where there is no Consular Office, nor one to be found in the near neighbourhood, and this would necessitate disbursements, the loss of valuable time, the exacting of power of attorneys, and other similar inconveniences. Therefore a way ought to be found for simplifying the matter, and of allowing the disabled man to cash his pension within the district of residence, if possible, and from those same local authorities that are entrusted with the satisfying of the pension claims due to the indigenous disabled men. It is evident, however, that, given the lack of similarity between the administrative organisations, and more especially as regards the pension bureaus of the different States, the final decisions of the authorities can be arrived at only after the exchange of views, and the drawing up of appropriate international agreements, fortunately of which important examples are not lacking, belonging to very similar subjects. I will cite, as an instance, the labour treaty drawn up between Italy and France, 15th April, 1904, that accords facilities with regard to the payment in France of pensions due to Italians and to Frenchmen at the Italian National Bank, and *vice versa* (Art. I B).

Another measure to be taken, akin to the preceding one, and not less important, is the one connected with private national institutions, created or working in whatsoever manner abroad, with the object of protecting the national disabled men; these institutions ought to find, as far as is possible, authoritative aid and support for the carrying out of their task amongst the authorities of the country wherein the disabled men have elected to reside; and the co-operation between them and the public and private local protective institutions for the disabled men, ought to be not only allowed, but encouraged.

With regard to extending to the foreign disabled man the advantages enjoyed in each State by the indigenous disabled man, the first principle to be followed in this matter appears to be that of the application of the extension itself in the broadest and most unlimited manner. Especially it ought not to be possible to refuse to the foreign disabled man, on his arrival abroad, and whilst he is attending to all the formalities connected with the receipt of his pension, or with his re-employment, in view of the impossibility of his being provided for by his native authorities and private institutions, the donation of subsidies of the kind so-called "*expectatives de pensions*," with the proviso of its being refunded, if necessary. Nor ought he to be excluded from the benefit of professional training, should he not have been able to take advantage of it in his own country. And he ought to be able to enjoy, also, all the facilities relative to medical care in

case of sickness, to the renewal, repairing, choosing and adequate adaptation of prothesis apparatus; to his re-employment and all that is more intimately connected with it; to his receiving all necessary information; to his introduction to commercial and industrial people; to the extension in his favour of the obligation of all foremen or public administrations, for whom any work is to be done, to employ a certain number of disabled men; to aid him in the drawing up of his contracts of labour so as to protect him from any advantage being taken by foremen with regard to the amount of his salary or to the payment of the latter, and in general to the wording of said contracts; the superintending, by those especially entrusted with this task, of his work. Nor ought he to be refused participation in the associations of mutual aid, instituted amongst local disabled men, nor his belonging to co-operative provision associations of any kind; the possibility of sharing the benefits that will be eventually assured by appropriate laws, with reference to the advancing of money for the acquisition of tools, to loans without interest being charged and other financial facilities; the concession of cheap lodging and the providing of special machinery or power for work to be done at home; finally, the sharing of all benefits deriving from social laws with regard to accidents at work, to premature disablement, and to infirmities in general, to old age and to strikes. It is to be hoped, as regards this last group of laws, that, at least with respect to the disabled men, there will be the abolition of the restrictive regulations which, in a few of them, aim at foreigners in general; for instance, where, in case of disaster, the permanency of the victim, or of his relatives, in the territory of the respective State is required, or that the relatives should be present there at the time of the disaster. It is also to be hoped that these abolitions will be included in the legislation of those countries where they are non-existent, and that international agreements will be concluded so as to simplify, bring about quicker solutions, and eventually make free of expense, the winding up of all proceedings referring to liquidations within the country, and the necessary means for inquiry abroad.

The last category, which I have mentioned already, of measures to be taken with regard to disabled men abroad, includes all those that become necessary from the very fact that the disabled men are residing in a country which is not their own, and are, therefore, of such a nature as to render their application to indigenous disabled men unnecessary. To cite an instance of this, there are the stipulations set forth in either national or international legislation for facilitating the return of disabled men to their own country, for cashing the amount of their savings when abroad, or allowing them to be represented by the local protective organisations, or, better still, by the Consuls and official agents of his native country, provided the consent of the interested parties has been obtained, in all such relations as they may have with the local administrative and judicial authorities; this with a view of protecting them against the speculations of busybodies and intriguers to whom they might otherwise have to turn.

These are, as a whole, a few of the principal measures that ought to be taken for constituting the protection of disabled soldiers and sailors abroad.

This report is, naturally, incomplete, and does not, as the writer fully realises, cover more than a small part of the question. Yet to have gone into it in a more detailed and minute manner before this Conference would have appeared premature, for by limiting ourselves to calling their attention to this most important problem, to describing a few of its general features, and some of the steps to be taken towards its solution, would seemingly be most correspondent with the terms of the constitution of this same Conference. This will, at any rate, serve as a pretext for further discussions and suggestions by those who interest themselves as to the future and well-being of disabled soldiers and sailors, and perhaps a few of the suggestions contained in this report may be constituted into a point of departure, for the final decisions to be taken with regard to national and international legislation on the subject.

Given its characteristics and the difficulties that will have to be superated with regard to it, the sooner the question of this legislation is taken up, the better. A special conference ought to be called together, composed of delegates from the Allied countries, and of special experts in all juridical matters; in the decisions arrived at by this body there must be taken into account the emigration to the different countries and the conditions of foreign labour in each one, of the various juridical arrangements that are enforced therein, especially as regards the social and administrative laws; account must be taken of the suggestions made at various periods by experts and assemblies with reference to the best way of organising the care of disabled men abroad, of the aims and of the means placed at the disposal of the public and private institutions that have been created in each country for the providing of protection for disabled men and of the particular exigencies of disabled men abroad. Having considered all these points, the above-mentioned Conference will decide as to the various international regulations in general that will superintend the protection of disabled men, and will designate the special conventions that must be concluded between the different States, as also the rules to be inserted in the internal juridical arrangements of each one of the States.

In conformity with the proposals already set forth in the preceding Conference, having regard exclusively to the constitution of an International Bureau for the service of the protection for disabled men in the interior of each country, it is apparently intended to propose that the attributes of this Bureau should occupy a larger and more comprehensive sphere of action and that it should become a directing and co-operating central organisation of all that is to be put into practice and proposed with respect to the protection of disabled soldiers and sailors, should overlook the observance of the national and international regulations already adopted, investigate and facilitate all necessary

reforms, especially superintending the care of disabled men abroad.

It ought to be the duty of everyone to co-operate in this protection, and, by so doing, in addition to the protective measures taken on behalf of the disabled men by the Authorities or by private individuals as regards their material welfare, surrounding them with an indestructible atmosphere of warm interest and affection which would help them to bear the sensation of the gravity of their accomplished sacrifice and to feel less alone and estranged in the midst of the busy life surrounding them. And it must also become the pre-occupation of all authorities and private individuals to do everything in their power to aid the disabled soldiers and sailors residing in foreign countries in order to make their lives happier in every respect.

And for this reason it may become opportune to create a special international decoration to be given to all disabled men, as has already been done privately by a few of the Allied nations, which would command respect and esteem in every land.

Having regard to the above, the following resolution is proposed :—

The delegates of the Inter-Allied Conference for the Assistance of Disabled Soldiers and Sailors, having recognised that the protection of the disabled men constitutes a duty not only of the several countries of origin, but also of all the Allied nations, and that they have the obligation of the greatest solidarity and mutual assistance in carrying out this protection, Votes—

(1) That, with regard to the foreign disabled men, each Government should abrogate from the national legislation all decrees prohibiting the access of the respective territories, or that in any way are unfavourable and place the foreigner in a position of inferiority with regard to the men of the country ;

(2) That no obstacles shall be put in the way of the creation of foreign institutions for the protection of disabled soldiers and sailors ; that they shall be authorised to co-operate with the local public and private institutions of the same character, and that their work be facilitated ;

(3) That to the foreign disabled men shall be extended to the utmost limit all the measures of protection adopted for the national disabled men ;

(4) That, especially, there shall be extended to all foreign disabled men, and to their relatives, the benefits of social laws with regard to labour disasters, premature disablement and all infirmities in general, old age and strikes ; that similar laws shall be introduced into such juridical texts as are without them, and that all restrictions stated in them shall be abrogated in favour of the foreigners and their relatives ;

(5) That there shall be international agreements and national laws for facilitating the return of the foreign dis-

abled men to the country whence they departed to go and join the Army in their native land ; for the collection of their disablement pensions, allowing them to accomplish it in the district wherein they reside and by means of the local authorities ; for the quick and gratuitous winding up of all legal formalities in foreign countries demanded by the liquidation of indemnities assured to them through social legislation ; for the easy and safe transmission of their savings abroad ; for their being represented (provided they consent) by the consuls and national official agents ; for repatriation ;

(6) That an appropriate Conference shall be called for deciding upon the text and form of said agreements as well as on the subject of the reforms to be indicated as worthy of introduction into the different national legislations ;

(7) That the International Bureau for the Protection of Disabled Soldiers and Sailors, apart from the complete collection of the documents relative to this work, shall be entrusted with the task of co-ordinating all the work of protection done by each nation, and especially to see to the protection of disabled men abroad and to the observance of the national and international regulations that have been adopted ;

(8) That there shall be created a special international decoration for the disabled soldiers and sailors belonging to the Allied nations.

SECTION 2.

WHAT HAS BEEN DONE FOR THE TRAINING OF OUR DISABLED SAILORS AND SOLDIERS.

BY MAJOR ROBERT MITCHELL, C.B.E.

One of the most tragic phenomena presented by this prodigious age, and one which by its horror and magnitude moves public opinion most profoundly, is the harrowing spectacle of the immense numbers of sailors and soldiers which the methods of modern warfare have sent back to civil life mutilated and maimed. It is a problem of the highest importance which here presents itself, and we anxiously ask what is to become of all these glorious wounded for whom it will be very difficult, or even impossible, to gain a living by their customary employment.

Pensions and their origin.

In Great Britain, as in most foreign countries, the interests of disabled sailors and soldiers were for many centuries left to private charity. In feudal times the lord who brought his vassals to the King's army was expected to look after those who were wounded, and the widows and orphans of those who were killed in his service. The monasteries, too, were always there to supplement the charity of the negligent feudal lord, while after the decay of the feudal system, maimed soldiers and sailors looked almost entirely to the charitable institutions for care and sustenance. The dissolution of the monasteries left the maimed soldiers without any organisations prepared to look after their interests, and, in Elizabeth's time, when hundreds of soldiers lost health and limbs in Flanders and France, the duty was forced upon the State. Accordingly, in the last ten years of her reign, a series of statutes were passed making provision for the "maimed, hurt, or grievously sick soldiers," but as the obligation to raise a rate for this purpose was laid on the counties there was a tendency for each county to evade the duty, and so the poor fellows were hurried from one county to another so that such payment might be avoided.

The first real attempt to care for the sick and wounded in this country dates from the days of Charles II., when, in 1664, four special Commissioners were appointed "to take care of such sick and prisoners of war as might be expected," whilst physicians, surgeons and marshals were appointed at all sea-ports. According to "Evelyn's Diary," the pensions in those days involved "the vast charge of no less than £1,000 weekly," as compared with the present day expenditure of nearly half a million pounds sterling. It was in the reign of Charles II., too, that the Royal Charter was issued which led to the foundation of Chelsea Hospital. Macaulay, in his "History of England," tells us that, during the subsequent reign of William III., "grey-headed old pensioners crept about the arcades and alleys of Chelsea Hospital," and it is a significant

fact that up to the present time pensions have been allocated at Chelsea.

A pension, according to Dr. Johnson's curious definition, was in England "generally understood to mean pay given to a State hireling for treason to his country." This would not have been true of the pension which Johnson himself subsequently received, nor of a considerable portion of those granted in his time; it would not now be true of any. A modern pension is as much a payment for undoubted services as salary or wages, the difference being that pensions are paid in respect of the past, salary or wages in respect of present, services. To-day, however, it is universally felt that no monetary payment will express the gratitude we owe to those who have offered their lives on behalf of the Mother Country and have been maimed in defence of our liberties. To these men, at least, we owe health (if health be possible for them), a place in the world, and opportunities by which they might be able to supplement their poor incomes—thus providing them with the possibility of spending the remaining years of their lives in a state of reasonable contentedness.

The New Warrant of 1917.

With these considerations in mind the Minister of Pensions has devised a scheme by which all partially disabled sailors and soldiers can either continue their previous employment or fit themselves, by studying under proper guidance, for full citizenship and useful occupation. Training is provided at the expense of the Ministry for all discharged disabled men whose disablement is due to, or aggravated by, naval or military service in the present war.

The New Royal Warrant of 1917 introduced most interesting changes in the principle of minimum pensions to disabled sailors and soldiers. In the first place, every man who takes up training is granted the sum of 27s. 6d. per week in lieu of pension, with any proportional increase according to rank. In the case of a married man allowances are made: To his children at the rate of 6s. 8d. for the first child, 5s. for the second, and 4s. 2d. for each additional child. Where the man has to leave his home during the period of training, his wife receives a sum of 13s. 9d. per week.

Methods of Administration.

For the execution of its training scheme the Ministry of Pensions utilises the Local War Pensions Committees, of which there are 350 scattered throughout the country. Affiliated with these committees are various special committees whose duty it is to deal with all applications for training from persons residing in a particular district. The local committee is thus responsible for all discharged men living in their area, and they make it their business to get in touch with every such man, whether or not he has obtained employment or occupation since his discharge, and see that the treatment or training which his condition requires is secured for him when he needs it. Many men are able, very readily, at the present time to obtain employment of one kind

or another, but such employment may, owing to their physical condition, be actually detrimental to their permanent health. Others may drift into occupations in which their employment may only be temporary, whereas if they had received training for a skilled occupation they would have the prospect of permanent employment. It is, therefore, vitally important in the man's interest and in that of the nation that any case which needs either treatment or training should be taken in hand at once.

In most localities special schemes of instruction have been adopted to meet the particular requirements of the neighbourhood, and these have been sanctioned by the Minister of Pensions. With the object of still further improving and extending facilities for training, the country has also been divided into twenty districts, each governed by a joint committee composed of representatives from all the Local War Pensions Committees within its area. Thus, for instance, the counties of Kent, Surrey and Sussex form one group, and to each of these groups a representative of the Ministry is assigned.

This joint committee can then deal with all the cases of training within the area which the localities are unable to provide for, and can arrange a systematic and concerted scheme of instruction for the whole district. This arrangement has proved to be of great utility, and many districts have already established a most comprehensive list of training facilities within their areas. Altogether, some forty-five different trades are being dealt with, and, in some cases, such as fancy leather work, an attempt is being made to foster trades which were largely in the hands of our enemies before the war. Thus, it will be seen that the system under which the training is administered has been carefully devised and is capable of great elasticity, a quality necessary in view of the probable developments which will inevitably take place in the event of demobilisation.

General Training Scheme.

The scheme of training initiated by the Ministry of Pensions recognises the care of the disabled sailors and soldiers as a duty of the State and includes in its provisions :—

- (1) The restoration to health of the disabled, where practicable.
- (2) The provision of training facilities.
- (3) The procuring of employment.

The number of disabled sailors and soldiers capable of benefiting by a course of training is large, being estimated at about 80 per cent. of the total disabled; that is to say, the majority of injuries sustained are not of such a nature as to prevent the utilisation of these men, sooner or later, in civil life.

The importance of starting training at the earliest possible date was soon recognised, and all who have had practical experience agree that the disabled men degenerate with startling rapidity if they are left in idleness. Crippled men tend to mope and brood

over their misfortune, and if this natural depression is not dispelled, it soon develops into a chronic apathy and despondency. The ultimate object, therefore, of any scheme of training should be to restore the disabled man to his old position, and to make him feel himself a normal member of the community and to help him to forget the handicap under which he labours.

Convalescents are, therefore, led to occupy themselves as soon as possible with the question of the future which is before them, and to this end the many weeks of inactivity in the hospital is the most suitable time. Especially is this the case in regard to the various limbless hospitals where the men have a good deal of time on their hands whilst waiting to be fitted for their artificial limbs. With the object of utilising such spare time, workshops were first established at the Queen Mary's Auxiliary Hospital at Roehampton, where great success attended these classes even before the Government scheme was mooted. Indeed, it was in this rather humble beginning that the nucleus was formed for the national scheme of training as set forth in the Warrant of 1917.

The chief facts which are usually taken into consideration when choosing a new calling for the disabled are :—

- (1) The nature and degree of the disablement.
- (2) The personal inclinations of the disabled, who might have a strong preference for a particular trade rather than any other.
- (3) The callings chosen should, as far as possible, be simple and of such a nature that they can be quickly learnt.
- (4) The calling should give promise of a fair remuneration and the assurance of permanent employment to those who undergo the necessary training.

The practical value of a scheme being essentially judged by its results, it might be advantageous to consider those already achieved by the vocational training of the disabled in this country.

Technical Schools.

After obtaining their discharge from the hospital, the training of the men is usually continued at one of the many technical schools which are distributed throughout the country, where the hours of attendance need not exceed thirty per week. After a course of training extending from three to six months, the disabled man is then invariably able to enter the factory and to keep the regular hours of work, which may not have been possible at an earlier stage. The facilities in these institutions are rapidly increasing as the scheme widens its activities, and at the present time the Ministry has sanctioned training in no fewer than 345 technical institutions and agricultural colleges as well as in 513 workshops and factories. Meanwhile, the list is expanding week by week. Training is now undertaken in 45 different trades, several of which, before the war, were in the hands of the enemy. Thus the scheme is helping to promote new industries in this country.

The Trade Unions and Trade Societies.

Every effort is made to ensure the placing of the disabled men in those branches of industry which seem to offer scope for employment of a permanent nature. To this end the help of the various Trade Unions and other organisations of employers and employees has been enlisted, and they have cheerfully and readily arranged for such conditions of training and employment as will ensure for those trained a welcome into the ranks of organised labour. Such arrangements have been made in connection with no fewer than twenty-nine organised trades. These have been designated "Special Trades," and special advisory committees have been set up in each industrial centre where such instruction is given. The representatives of these associations, in consultation with the officials of the Ministry of Labour and the Ministry of Pensions, have drawn up the conditions under which disabled men might be trained in each particular trade. These instructions are printed, and include information concerning the length of training, the rates of pay, and other matters in regard to the relations between those already engaged in the trade and the new recruits from the disabled. Sixteen small booklets have been printed in connection with these special trades, which point out the most suitable openings for the disabled. These are circulated to every committee in the country, and it is hoped that most of the trades will be thus treated.

In this manner the opposition to training which might otherwise have arisen among these various trades associations has been averted, and instead, their hearty support and co-operation is being received.

Various Trades.

Every effort is being made to find the most suitable openings in manufacturing and constructive work into which the disabled might be directed. Already courses of training are established in connection with certain branches of the engineering and building trades, the manufacture of aircraft, wholesale and retail tailoring, the making of furniture and leather goods, and many other trades.

In the present connection mention can only be made of a few of the openings into which the disabled have profitably been directed.

(a) *Boot and Shoe Making*.—In January, 1915, a scheme of training in this industry was brought before the Board of Management of the Cordwainers' Institute of London, and, with the assistance of the Trades' Advisory Committee, was duly considered, and the rules of working were drawn up. The classes were started in February, 1916, and have formed a model for the institution of similar classes in other parts of the country. The work offers advantages to those who are unable to stand continuously at their work. The period of training is forty-six weeks, and the men are instructed not

only in the making of hand-sewn boots and shoes, but also in measurement, anatomy of the foot, as well as in all branches of repairs. A short course of six months is arranged for those who only desire to learn boot repairing.

The results in this branch of work have been eminently satisfactory, and after their period of training many of the students have received situations at good piece-work rates in West End establishments.

Classes in boot and shoe making are now conducted at Cardiff, Dundee, Edinburgh, Manchester, Leeds, Bristol, Liverpool, Walsall, Leicester, Norwich, Barnsley, Birmingham, Glasgow and other towns. In all, there are thirty-nine centres.

(b) *Retail Tailoring*.—One of the most suitable outlets for many has been the retail tailoring trade. There seems no doubt that there will be a fair prospect of employment for disabled men in this trade after the war. Even before the war employers failed to secure a sufficient supply of good British journeymen tailors, and there is a consensus of opinion among them that this difficulty was increasing. The old system of apprenticeship was dying out, and the supply of British journeymen failed to meet the demand. The result was that the making up of garments, at all events in London and many of the large towns, was done to a very great extent by foreigners of various nationalities.

The work of cutting and making up garments is a skilled form of employment and the wages paid are consequently good. A first-rate cutter or foreman tailor may be paid from 70s. to £10 per week, according to his ability. The average earnings of sewing tailors range from 30s. to 55s. per week. Naturally, a thorough training is necessary for this work, but the length of time varies with the learners' adaptability.

A full-time day training course has for some time been in existence at the Regent Street Polytechnic, and a special twelve months' course of training for disabled sailors and soldiers has recently been established, with the concurrence of the associations of employers and workpeople concerned.

Arrangements have also been made to start a course of a similar nature at the Merchant Venturers' Technical College, Bristol, and further training centres are also to be established in Glasgow, Leeds and Manchester, as an experiment, and if further demand arises training centres will also be established in Aberdeen, Birmingham, Cardiff, Edinburgh, Liverpool and Plymouth.

(c) *Leather Work*.—The manufacture of leather goods is almost wholly concentrated in two districts—London, where 60 per cent. of the trade is carried on, and Birmingham and Walsall, which account jointly for 30 per cent. Fancy leather goods and the light kinds of solid leather goods offer light work, but require dexterity and adaptability, and sometimes give scope for individual intelligence and artistic taste. The material is valuable and easily spoiled. This means that training is expensive, and a preliminary period of training in a technical school is strongly recommended. Such courses of training are already conducted at the Cordwainers' College, London, and at the School of Art at Walsall.

(d) *Aeroplane Manufacture*.—Another comparatively new industry is the manufacture of aeroplanes, but during recent years very great progress has been made in its organisation. It is now widely distributed throughout the country, especially in and around the outskirts of large towns, and openings may, therefore, present themselves near the homes of disabled men.

At the present time there is a great demand for suitable men, and it is believed that the future developments of the industry will ensure a reasonable prospect of continuity of employment after the war. It has, therefore, been arranged by the Trade Advisory Committee that disabled men may be admitted into the trade after passing through the necessary course of training.

(e) *Diamond Polishing*.—One of the most novel and successful schemes of training has been that of diamond polishing and cutting.

In May, 1917, a well-known diamond importer, Mr. Bernard Oppenheimer, offered to teach discharged and disabled men this highly paid industry.

The necessary machinery was rapidly erected, and in August, 1917, a start was made with about 20 men, who were trained by Mr. Oppenheimer's instructors.

The men undergo a course of training for six months. At the close of their training the men are drafted by Mr. Oppenheimer into his factory, where they start with a minimum wage of £2 per week, which is increased according to proficiency. Thus, a skilful polisher may earn as much as £4 or £5 per week at the work.

Some critics may ask—Is such a highly skilled trade suitable for men who have had no previous experience in mechanical work? A recent visit to the classes at Brighton elicited the fact that the men have come from almost every walk of life. I will cite two instances. One related to a man who, previous to the war, was a labourer in the London Docks. Enquiry of the in-

structor revealed the interesting information that he was one of the most promising students. A second man remarked that he had been an estate agent in Canada, and he naïvely said : " I would not leave these diamonds for all the tea there is in China "—clearly showing the keen interest he was taking in his work. It is hoped shortly to set up other training centres for diamond polishing at Acton Hall, Cheshire, and probably at Cambridge.

It is interesting to note that not a single man who has entered for training in diamond cutting or polishing has discontinued of his own accord.

(f) *Engineering*.—At present the training classes in the various branches of engineering are not fully developed, as the negotiations with the Trade Advisory Committee of the many branches of the trade are only just completed, and on the publication of the " Instructions " they will be set up in as many centres as possible. The equipment and machinery needed presents some difficulties in the present state of affairs, but every effort is being made to instal the minimum requirements, and an arrangement will be entered into with the Technical Schools where such classes are established, so that the cost of special equipment will not fall on the local authorities.

In connection with this branch of training it should be remembered that a very large number of disabled men have taken advantage of the terms offered by the Ministry of Munitions for training in munition making, and thus have already secured an acquaintance with modern machinery and a knowledge of the use of tools which will undoubtedly prove of great assistance should they eventually take up a more complete training for engineering work.

(g) *Dental Mechanics*.—Another industry which offers well-paid employment to a skilful man is the profession of dental mechanic. After lengthy negotiations, conditions of training and employment have now been settled, and a good many men are being trained either at Technical Schools or in several cases in the private laboratories of mechanical dentists and in the dental hospitals.

Before a man can become a good dental mechanic, he has to acquire skill in certain technical processes. These processes include the handling of plaster of Paris as used in the making of fine casts, the melting and casting of metals, the accurate fitting of sheet metal to irregular surfaces, the use of the blow-pipe, wax modelling, the manufacture and polishing of vulcanite and the exact

and artistic adaptation of porcelain teeth to the needs of the cases, no one of which is exactly like another.

All this requires patience and application, and much practice under competent instruction; but the work offers attraction in the variety of its technique, in the ingenuity and initiative for which it affords opportunities, and in the certainty of a good and steady wage in the case of a man possessing aptitude and character.

(h) *Cinema Operating*.—One of the earliest schemes of training under the Ministry was that of cinema operating. Even before the full allowance, as set forth in the Warrant of 1917, was paid to the men, a start was made from the men who had left the Roehampton limbless hospital. The classes are now thoroughly organised, and are held in the large film distributing centres of London, Newcastle, Cardiff, Southampton, Glasgow, &c.

The course is an intensive one of three months, and the men are thoroughly taught not only the use of the projector, but also the working of motor generators, wiring, and many other technical operations concerned with the trade.

That the training is thoroughly carried out is evidenced by the fact that there has been no difficulty in placing every man who has been trained in a good situation. The leading cinema companies have been only too pleased to get properly trained men, and the wages range from £2 10s. to £3 10s. a week, independent of the man's pension. The lecturer of the Ministry, who has been recently touring the country with a Cinema Talk on training, in many instances found men who had been trained in the classes at work in the cinema operating boxes. In one of the instances, at Llanelly, South Wales, the manager of the hall had nothing but praise for a one-legged operator he had obtained from the Cardiff Training School. The cordial co-operation of members of the cinema trade with the Ministry in its efforts to find a new field of employment for disabled soldiers and sailors has done much to ensure the success of these classes.

(i) *Agriculture*.—No effort is being spared to retain in agricultural employment all the country-bred men who are capable of being employed on the land, seeing that the drift to the towns is already serious enough. Various projects have been mooted for forming farm colonies, but so long as these colonies are intended solely for training and experimental purposes they might be of great value. It would be manifestly unwise to allow

any disabled men to start as smallholders or market gardeners unless it is clear that they have a real prospect of being able to make a living. A qualifying course at an agricultural college or farm colony is, therefore, an admirable means of eliminating men who are unsuited to work on their own account.

A branch of agriculture which is in its infancy in this country is motor traction work ; that is, the use of motor engines for farm work. As continuous cropping is likely to be largely increased, the industry will probably offer a steady and secure field of employment. It has been estimated that a large number of those who cultivate even medium-sized farms will in the near future use a motor and employ a man to look after it. If so, there will be permanent employment for several thousand men in this industry. The advantages of this work are that it is done in the open air and at a slow pace, and that it offers openings in a branch of agricultural employment which is comparatively new, which requires a special training, and in which, therefore, the new-comer will not be taking the place of skilled men who are temporarily absent at the front. Courses of theoretical and practical training at a technical school for three months, followed by a short course of actual driving and ploughing under the local tractor representative of the Board of Agriculture are now provided. At Wimbledon Technical Institute and at Wolverhampton and Crewe such a course has been in operation for some time for training sailors and soldiers, and a few other Local War Pensions' Committees are arranging for similar experimental courses in connection with local technical schools.

(j) *Commercial Work*.—There is a great opening for the disabled in commercial undertakings. Thanks to the existence of a far-reaching division of labour, the activities of the employees in commercial concerns are both varied and manifold, and even the severely injured may find some kind of occupation open for which they are either physically or mentally fitted. In some forms of commercial work a specialised course of instruction is not necessary, and the requisite specialised knowledge and experience may be gained in the particular business itself, provided that the man possesses a good general education. But when there is a desire to change from one particular branch of commerce to another, a specialised course of training is necessary. Such courses have long been established in a number of centres and excellent work is being done.

From what has been said of the various trades, it will be seen that the results of the working of the scheme

of training inaugurated by the Pensions' Ministry have so far been most encouraging. Already several thousand disabled men have adopted some form or other of handicraft training, and occupations have been carefully selected to suit each man's particular disablement.

(k) *Widows' Training*.—The Royal Warrant of 1917 makes provision for the training of widows. Any widow of a soldier who is already in receipt of an allowance of 13s. 9d. a week, or any sum above this amount, is eligible for training if her circumstances make it needful for her to add to her income by taking up some remunerative occupation in her own interest or to support her children. In addition to the allowance she already draws, and also that for her children, a further allowance at a maximum of 12s. 6d. a week can be paid to her during her period of training in order to adequately provide for herself and her children whilst her training is being given.

The only conditions laid down are, that the widow should be suited by education and intelligence to undergo the desired course of instruction and the work which the subsequent pursuit of her occupation would involve; also that satisfactory arrangements can be made for the care of the children, if any, during the mother's training, and that her occupation afterwards shall not materially interfere with the still more important duties of the home. The Ministry do not think training advisable where there are several very young children, or even if there are many children in the family.

The usual period of training will be three months, during which time allowances are paid, but where instruction of a highly skilled or semi-skilled professional character is arranged for, a longer period of training will be sanctioned.

The application is made, as in the case of the men under training, through the Local War Pensions' Committee. Already arrangements have been made whereby widows may be trained in various well-known trade establishments. These are of a varied character and include :—Box making, watch and clock repairing, commercial subjects, cookery, corset making, dental mechanics, home industries, machinery, blouse making, mantle trade, maternity nursing, midwifery, nursing, school teaching, while special arrangements have been made with many of the largest drapery establishments in the West of London. In the latter case immediate employment is offered after a short course of training. It is, therefore, hoped that, with the facilities provided and allowances which are payable, many widows whose pecuniary circumstances demand it will have an oppor-

tunity of adding to their income, if such training does not interfere with the duty of bringing up their children.

Hostels.

In the early days of training considerable difficulty was experienced in lodging the men from Roehampton who were attending training classes at the Regent Street Polytechnic. These men had to go backwards and forwards to Roehampton each day. It was at this time that the London Eccentric Club made the offer of a hostel for the disabled men. This hostel became overcrowded, and a further hostel was opened in Soho Square. This splendid effort of the Eccentric Club has resulted in six hostels being opened in London, whilst the provincial branches of the club have opened others at Brighton, Barnsley, Manchester, Birmingham, and various large centres where training is taking place. The example set by the Eccentric Club is being taken up in different parts of the country, and already many hostels have been provided for the men during training.

Workshop Training.

(a) *Lord Roberts' Memorial Workshops*.—These workshops were opened shortly after the close of the South African War, as a result of the difficulty which the Sailors' and Soldiers' Help Society experienced in obtaining remunerative work for the badly disabled in the open labour market. These have been running successfully on a self-supporting basis for some ten years, and are thus a proved success.

The present war naturally created new and greatly increased demands upon the institution, and it was decided that the additional funds necessary to meet them should be raised by the creation of a Memorial Fund in honour of the late Lord Roberts.

As a result of this effort, in March, 1915, large buildings were acquired at Fulham with the intention of capturing the German toy trade, in addition to affording training in many other classes of work, such as carpentry, leather work, basket making, painting and decoration, designing, brush making, &c.

Employment is found for the disabled men and their families. Each man starts with a minimum wage of 20s. per week when quite unskilled, obtaining 25s. per week as soon as his aptitude has been discovered, which is usually from one to eight weeks. Afterwards, when trained, he gets trade union rates of pay, and if that is 50s. a week, he obtains it in addition to any pension he may be getting from the Government.

The London Works are the centre of the whole organisation, but many specialised branches are established, or proposed for various parts of the country. These, in addition to making finished articles of the kind allotted to them, will supply neces-

sary parts to other branches. Thus, the proposed metal working branch at Birmingham, in addition to making metal toys, will provide all metal parts necessary for the completion of the wooden toys made in London, Bradford; the printing centre will do the printing for the whole organisation, and so on through every branch. Branches are also proposed at Plymouth, Newcastle, Nottingham and Manchester, but the exact industries for these have not yet been determined.

(b) *Queen Mary's Auxiliary Hospital*, at Roehampton, and *Queen Mary's Workshops*, at the Pavilion, Brighton.—Men who have suffered the amputation of one or more limbs receive some industrial training here. They first go to Brighton, where they spend eight to twelve weeks of convalescence; during which time they visit the workshops and take courses of instruction in electrical work, carpentry, or in the mechanism or management of motor cars. There are also classes in book-keeping, typewriting and business correspondence. They then proceed to Roehampton for the fitting of artificial limbs. At Roehampton further courses are given on similar lines to those at Brighton. The Ministry has recently recognised the National character of the work here accomplished, and has assisted in the upkeep of the workshops by the grant of a weekly capitation fee for each disabled man who is undergoing training.

On leaving Roehampton the men are advised to continue their training, if possible, and for these the London Polytechnics make special provision.

An employment bureau has been organised, and has already placed over one thousand men in various remunerative occupations.

Training the Blind.

In the case of certain of the disabled the task is finished after they are medically cured. For the blind, however, it is just at that moment when the social task really begins. Conscious of their physical shortcomings, they become as little children for whom a happy life is possible, although they must be initiated into that new life. The treatment and training of blinded sailors and soldiers is carried on at *St. Dunstan's Hostel in Regent's Park*. This invaluable institution was started by the initiation and under the leadership of Sir Arthur Pearson, the blind journalist and philanthropist. The work starts in the military hospital, where the blinded men are visited by representatives from the hostel. Later they are brought to St. Dunstan's, and taught to earn their own living. The subjects taught are Braille reading, writing, typewriting, shorthand writing by the Braille system, massage, telephone operating, carpentry, boot repairing, mat making, basket making, while in as many cases as possible the men receive special training which enables them to return to their original vocations.

St. Dunstan's and its annexes in London and at Brighton, Blackheath and Torquay, have accommodation for 415 men, while 315 are in residence. A new building being erected in the grounds at present, will provide accommodation for 250 more men. The duration of training depends on the capacity of the individual and the nature of his work, the average being about eight months. An after-care branch, under the management of the National Institute for the Blind, provides for the future of those who have left to re-commence work in the world under the new conditions imposed by their disablement.

Training the Deaf and Dumb.

For those who return from the firing line either deaf or dumb, and in some cases both, special treatment and training is provided.

The term deaf is often used to describe those who are dull of hearing, as well as those who have no hearing power at all. Dullness of hearing of moderate degree may not prevent continuance of occupation in many trades and businesses, but in some it is absolutely prohibitive, and in very many a great handicap. Such persons as salesmen, canvassers, booking clerks, and all whose work involves rapid oral communication or comprehension of orders or instructions could scarcely continue their former employment if afflicted with deafness. The openings for the very deaf depend very much on the degree of intelligence and education of the sufferer. To render them as fit as possible for the successful taking up of any of the means of livelihood, some means of rapid inter-communication with their fellows must be sought, and for this purpose an Aural Board has been set up and special classes have been formed in lip-reading.

Propaganda.

In addition to drawing the attention of the disabled to the advisability of taking up a prescribed course of training rather than accepting the first blind-alley occupation that may offer itself, the Ministry has devoted considerable attention to the publicity of its training scheme. On almost every railway station, and on all the principal roadways large and attractive posters have been displayed, whilst smaller ones of distinctive appearance have been exhibited in every post-office in the country. Thus, attention has been drawn to the excellent system of training facilities which now prevail. A special booklet has been issued with photographs of men who have undergone a course of training. Among periodicals on this subject may be mentioned the "War Pensions Gazette," which is issued monthly by the Ministry, and forms an excellent means of intercourse between the various Local Committees, whilst a special magazine, entitled "Recalled to Life," is issued at intervals and has met with a considerable circulation.

Further, appeal is made to the wounded and disabled by a system of hospital visitation, the utilisation of a free postal refer-

ence library, the holding of public meetings, illustrated lantern lectures, and in any other way which is calculated to induce the disabled to enter upon a course of training.

Quite apart from all considerations of national gratitude, it is evident that the State is bound, in its own interest, to train the disabled for future employment. For as long as the mass of the disabled are left to swell the ranks of the unemployable this dead weight of wasted men must inevitably retard our economic recovery. Moreover, the sacrifice which these valiant and disabled heroes have made gives them the right to claim that no effort shall be spared on our part to restore them to independence and usefulness.

It is, therefore, the interest of the State to grapple with this problem and to re-educate these men for fresh social service and citizenship.

SITUATION DE LA REEDUCATION PROFESSIONNELLE DES INVALIDES DE LA GUERRE EN FRANCE EN 1917.

PAR DR. BOURRILLON.

Le sort des nombreux blessés qui, dès les premiers de la guerre, ont rempli les ambulances et les hôpitaux, a préoccupé de bonne heure l'opinion publique en France. On a aussitôt cherché les moyens de reconstituer l'existence, de ceux que leurs infirmités mettaient dans l'impossibilité de reprendre leurs occupations habituelles.

Tout le monde comprit qu'il y avait là, non seulement un devoir de reconnaissance et d'humanité à remplir envers les vaillants défenseurs de la patrie, mais aussi un problème moral et économique de la plus haute importance à résoudre. Pouvaient-ils, sans danger pour la société, laisser inactives ces forces productrices, réduites, il est vrai, mais ayant encore une valeur d'autant plus grande que l'on devait prévoir pendant et après la guerre, une grave raréfaction de la main-d'œuvre? N'y avait-il pas lieu de songer aux conséquences sociales qu'entraînerait, dans les villes et dans les campagnes, la présence d'innombrables invalides, voués à tous les dangers d'une oisiveté redoutable autant pour eux-mêmes que pour la tranquillité publique?

La France, qui fut l'une des premières victimes de l'agression allemande, fut aussi la première à préparer l'avenir de ses héroïques soldats mutilés et estropiés. Malgré l'invasion de son territoire, malgré l'énorme poids de la lutte qu'elle supporte si vaillamment, elle a organisé de nombreuses écoles dont on trouvera plus loin la liste, relevée par l'Office National des Mutilés et Réformés de la Guerre, à la date du 1er juillet 1917.

Au cours de l'année 1917, le Parlement a discuté et voté une importante loi concernant la rééducation professionnelle et l'Office National dont nous venons de parler et auquel elle a aussi donné la consécration légale.

Cette loi, qui a été promulguée le 2 janvier 1918, a posé, dans son article 1er, le principe que : " Tout militaire ou ancien militaire des armées de terre et de mer atteint d'infirmités résultant de blessures reçues ou de maladies contractées ou aggravées pendant la guerre actuelle, peut demander sous inscription à une école de rééducation professionnelle, en vue de sa réadaptation au travail et notamment de sa rééducation professionnelle et de son placement."

Tout invalide peut donc demander, sous réserve des justifications que prévoit l'article 6, à être rééduqué et placé par les soins de l'Etat. Le projet primitif avait admis l'obligation de la rééducation, mais cette proposition a été écartée, car on s'est aisément rendu compte des difficultés qu'aurait soulevé l'application de cette mesure, qui mettait en péril la liberté individuelle si chère aux Français. Qu'attendre, d'ailleurs, d'un apprentissage forcé, alors que nous savons par expérience, que la volonté de l'homme est l'élément essentiel dans toute véritable rééducation ?

L'article 2 détermine les conditions de fonctionnement de l'Office National. Il y a lieu d'espérer que cet office, qui existait en fait depuis deux ans, mais dont les services étaient disséminés aux divers Ministères, exercera dorénavant son action directrice et son contrôle sur toutes les organisations qui participent à la rééducation professionnelle des invalides de la guerre, et c'est là une tâche d'une utilité inappréciable. En effet, parmi les nombreuses œuvres qui s'occupent de rééducation, il en est certaines dans l'organisation desquelles le cœur a joué un rôle plus important que la raison : il semble que le souci d'occuper l'invalidé et de lui procurer des ressources parfois, chose regrettable, hors de proportions avec le travail accompli, a trop souvent fait oublier le but essentiel de toute rééducation. Ce but consiste à pourvoir cet invalide d'une profession qui s'adapte, aussi exactement que possible, à ses facultés physiques, intellectuelles et morales restées intactes et qui lui garantisse durant sa vie une existence normale et honorable.

Aussi, pendant tout le cours de son apprentissage, faut-il constamment avoir présentes à l'esprit ces deux questions : 1° La profession enseignée assurera-t-elle l'existence à cet invalide ? 2° Une autre profession ne l'assurerait-elle pas mieux que celle qui a été choisie ? Il faut aborder le problème avec méthode, clairvoyance et en connaissance aussi complète que possible des données techniques et sociales indispensables et ne pas se laisser détourner par des raisons de sentiment.

L'orientation professionnelle est bien l'acte fondamental de toute rééducation et les nombreux rapports qui ont été présentés à la Conférence Interalliée de Paris, ont montré toute son importance. Elle donne cependant lieu à des erreurs fréquentes qui, hâtons-nous de le dire, peuvent être rapidement rectifiées, si la direction professionnelle et la direction morale de l'invalidé, sont pratiquement et intelligemment organisées dans une école. Malheureusement ces directions elles-mêmes sont parfois insuffisantes ; trop souvent l'on voit dans des écoles, des mutilés dont on admire le travail et l'habileté, sans songer qu'ils seront incapables de gagner leur vie par ce même travail, le jour où, sortis de cette école, ils se trouveront aux prises avec les difficultés de l'existence banale et les exigences du commerce et de l'industrie. Trop d'invalides ont déjà, à la fin de leur apprentis-

sage, éprouvé de cruelles désillusions, par suite du défaut de clairvoyance et de compétence de la part des personnes, bien intentionnées cependant, qui les avaient conseillés et dirigés, pour qu'il ne soit pas juste et nécessaire que l'Etat cherche à sauvegarder l'avenir de tous ses enfants blessés.

Le rôle principal de l'Office National doit donc, à notre avis, consister précisément à éviter ou à rectifier les erreurs dont les mutilés sont les victimes.

Le texte de l'article 2 de la loi du 2 janvier 1918 dit que :
 " L'Office National des Mutilés et Réformés de la Guerre, qui
 " est déclaré établissement public et rattaché au Ministère du
 " Travail, constitue un *organe de liaison* entre les administrations
 " publiques et les associations ou œuvres privées qui s'occupent
 " des militaires désignés à l'article 1er. Il a pour objet *de*
 " *centraliser les informations* concernant l'action des dites admi-
 " nistrations, associations ou œuvres privées, d'encourager et de
 " faciliter la réadaptation au travail des militaires sus-visés ;
 " *d'étudier les dispositions* législatives et réglementaires suscep-
 " tibles d'être prise en leur faveur et *d'en suivre l'application*,
 " et, d'une manière générale, de leur assurer le patronage et
 " l'appui permanents qui leur sont dus par la reconnaissance de
 " la Nation."

Si l'on interprétait le texte de cet article d'une façon étroite, l'Office National serait donc un *organe de liaison* entre les œuvres publiques ou privées, *de centralisation* des informations et *d'étude* des dispositions législatives, dont il suivrait l'application.

Heureusement son rôle est plus étendu et il a été décidé qu'il exercerait la haute direction et le contrôle immédiat des écoles subventionnées par l'Etat que jusqu'ici le Ministère de l'Intérieur avait assurés. L'Office n'en est que mieux qualifié pour de venir le conseiller bienveillant et l'inspirateur éclairé des œuvres privées qui se vouent librement à la rééducation des invalides de la guerre. Il est à la fois de l'intérêt de l'Etat, des œuvres et surtout des mutilés que cette collaboration soit aussi cordiale et aussi intime que possible, et que la rééducation soit uniformément soumise à une réglementation basée sur la raison et sur les résultats de l'expérience acquise jusqu'ici. La centralisation et l'étude des questions qui se rapportent à cette rééducation n'auraient aucun intérêt si elle n'aboutissaient à la direction et au contrôle qui en sont la conclusion pratique et naturelle. Nous ne doutons pas que le Parlement n'élargisse dans ce sens les pouvoirs de l'Office, si l'on estime que le texte législatif actuel n'est pas suffisamment net et précis sur ce point.

La loi du 2 janvier 1918 contient aussi l'affirmation de deux principes importants : le premier (Art. 7), c'est que pendant la période de rééducation la famille de l'invalidé continue à recevoir l'allocation ou des indemnités équivalentes et le second (Art. 8), c'est qu'en aucun cas le taux de la pension ne peut être réduit du

fait de la rééducation professionnelle et de la réadaptation au travail.

Ainsi cette loi, que complète un règlement d'administration publique, permet d'exercer sur la rééducation professionnelle, une direction et un contrôle qui deviennent chaque jour plus indispensables, car le nombre des écoles de rééducation en France s'accroît rapidement. Si nous prenons les statistiques dressées par l'Office National pour la période du 30 juin 1916 au 1^{er} juillet 1917, nous voyons qu'il y a actuellement 99 écoles professionnelles de tous genres, 41 écoles d'agriculture pour les blessés et 16 écoles pour aveugles ; au total 156 écoles ou œuvres de rééducation.

Voici la liste de ces écoles :—

ECOLES DE RÉÉDUCATION.

LOCALITÉS.		Nombre des Elèves.		Présents le 1 ^{er} juil. 1917.	
		Effectif prévu.	Passés du 30 juin 1916 au 1 ^{er} juil. 1917.		
ECOLES POUR AVEUGLES.					
Cannes	Ecoles des Aveugles de la Guerre (Association V. Haüy) ...	35	—	—
Marseille	Ecole de rééducation des aveugles, 15, Rue Paul ...	25	29	14
Dijon	Ecole de rééducation professionnelle d'aveugles ...	—	—	—
Saint-Brieuc	Do. Do.	30	45	18
Bordeaux	Le Phare de Bordeaux ...	70	57	32
Montpellier	Atelier des soldats aveugles ...	50	48	25
Saint-Symphorien		Ecole des soldats aveugles ...	30	29	12
Nantes	Ecole de rééducation d'aveugles (La Persagotière) ...	50	65	29
Montferrand	Ecole des soldats aveugles ...	30	44	23
Bayonne	Ecole de rééducation pour aveugles ...	—	—	—
Paris	Maison de rééducation des soldats aveugles ...	250	431	194
Do.	Le Phare de France ...	70	—	—
Do.	Association Valentin Haüy ...	26	80	29
Do.	Atelier d'aveugles ...	—	3	2
Do.	Ecoles de massage des aveugles	—	35	10
Do.	Abri du soldat aveugle ...	12	15	10
Amiens	Ecole des aveugles ...	20	15	—
Totaux ...			698	896	398

LOCALITÉS.		Nombre des Elèves.		Présents le 1 ^o juil. 1917.
		Effectif prévu.	Passés du 30 juin 1916 au 1 ^{er} juil. 1917.	
ECOLES DE RÉÉDUCATION AGRICOLE.				
Royat	Ecole pratique d'agriculture ...	—	—	—
Vernet-Ariège ...	Centre de rééducation agricole	36	11	11
Montagnac	Ecole d'agriculture	30	25	4
Aurillac	Ecole pratique d'agriculture ...	12	4	2
L'Oisellerie	Ecole pratique d'agriculture ...	30	—	—
Surgères	Ecole professionnelle de laiterie	6	19	4
Saintes	Ecole pratique d'agriculture ...	12	—	—
Neuvic	Centre d'agriculture	—	—	—
Mamirolle	Ecole Nationale de laiterie ...	3	2	1
Besançon-Palente	Ecole de rééducation agricole	74	—	—
Valentin	Ecole de réadaptation agricole	—	—	—
Ondes	Ecole régionale d'agriculture...	100	237	85
Auch-Beaulieu...	Centre de rééducation pro- fessionnelle agricole... ..	50	131	28
Blanquefort	Ecole spéciale d'agriculture ...	—	—	—
La Réole	Ecole pratique d'agriculture ...	—	—	—
Montpellier	Ecole Nationale d'agriculture	100	40	26
Rennes	Ecole Nationale d'agriculture	160	20	19
Villedomer	L'Aubinière	20	6	5
Poligny	Ecole Nationale de laiterie ...	—	—	—
Cellard, par St- Jodard	Section horticole	—	—	—
St-Etienne	Centre départemental d'agri- culture	30	6	6
Grand-Jouan	Ecole pratique d'agriculture ...	40	36	9
Fayl-Billot	Ecole Nationale d'osiericulture et de vannerie	32	46	13
Tombelaine	Ecole pratique d'agriculture ...	—	—	—
Berck S/Mer	Ecole de rééducation agricole	—	—	—
Lannemezan	Fruitière-école	—	—	—
Feully	Ecole pratique d'agriculture ...	—	—	—
Limonest	Institut agricole des mutilés ...	20	128	69
Contamines S/A.	Ecole Nationale d'agriculture	—	—	—
Pavillons s/s B.	Ecole de vannerie de l'Aisne ...	100	56	18
Grignon	Ecole Nationale d'Agriculture	15	15	7
Versailles	Ecole Nationale d'horticulture	15	3	2
Rambouillet	Bergerie Nationale	25	18	9
Gambais	Ecole pratique d'aviculture ...	20	7	—
Noisy-le-Grand	Ecole spéciale de mécaniciens conducteurs agricoles ...	80	413	70
Savigny S/Orge	Ferme de Champagne (U. des C.E.)	140	535	187
Pétré	Ecole pratique d'agriculture ...	20	6	4
Chavaignac	Centre départemental d'agri- culture	—	—	—
Ronceux	Ecole pratique d'agriculture ...	—	—	—
La Brosse	Ecole pratique d'agriculture ...	—	12	2
Totaux		1,170	1,790	581

LOCALITÉS.		Nombre des Elèves.		Présents le 1 ^{er} juil. 1917.
		Effectif prévu.	Passés du 30 juin 1916 au 1 ^{er} juil. 1917.	
	ECOLES DE RÉÉDUCATION GÉNÉRALE.			
Oyonnax ...	Ecole pratique de commerce et d'industrie	30	41	21
Antibes ...	Ecole de rééducation professionnelle Villa Beauregard...	40	67	24
Nice	Ecole de vannerie (" l'Aide aux Réfugiés ")	—	—	—
Troyes	Ecole de rééducation professionnelle	—	28	13
Rodez	Ecole des mutilés	78	—	—
Millau	Œuvres des mutilés de guerre Millavois	—	—	—
Marseille ...	Ecole de rééducation professionnelle	120	197	65
Do.	Centre d'appareillage des Blessés de la XV ^e Région ...	150	318	153
Caen	Ecole de la maladrerie	—	—	—
La Délivrande...	Ecole départementale de rééducation professionnelle ...	340	552	183
Angoulême ...	Ecole de rééducation professionnelle	40	68	25
Confolens ...	L'Œuvre des mutilés Confolentais	—	—	—
Saintes	Station école de distillerie, tonnellerie motore	16	17	5
Bourges	Ecole de rééducation professionnelle des blessés et mutilés	200	139	58
Chartres	Orphelinat St-Chéron	33	43	25
Brest	Centre de rééducation professionnelle	100	158	65
Nîmes	Ecole pour la rééducation des mutilés (Association régionale)	46	103	36
Toulouse	Ecole de rééducation (Château de Bellevue)	—	—	—
Do.	Ecole départementale professionnelle de mutilés... ..	70	56	19
Bordeaux	Ecole pratique et normale de rééducation	400	1,249	221
Montpellier ...	Ecole professionnelle des blessés de la XVI ^e Région...	500	657	280
Rennes	Centre d'appareillage et de rééducation	200	819	110
St-Cyr-S/Loire...	Villa Ste-Marie	100	205	90
Amboise	Etablissement cantonal des mutilés	25	25	16
Joué-les-Tours...	Centre d'appareillage	400	517	138
	A reporter	2,888	5,259	1,547

LOCALITÉS.		Nombre des Elèves.		Présents le 1 ^{er} juil. 1917.
		Effectif prévu.	Passés du 30 juin 1916 au 1 ^{er} juil. 1917.	
	Reports	2,888	5,259	1,547
St-Claude ...	Ecole de rééducation profes- sionnelle diamantaire ...	20	4	4
Do.	Ecole professionnelle des mutilés pipiers	25	10	3
St-Etienne ...	Ecole professionnelle de blessés militaires	210	267	180
Roanne	Ecole pratique de commerce et d'industrie	10	1	—
Nantes	Ecole professionnelle des mu- tilés	300	138	103
Orléans	Œuvre orléanaise de rééduca- tion	120	122	29
Agen	Comité départemental de ré- éducation professionnelle ...	108	9	2
Angers	Comité départemental de l'Anjou	—	—	—
Do.	Ecole Nationale d'Arts et Métiers	25	152	27
Cherbourg ...	Œuvre de rééducation des mutilés	—	—	—
Do.	Ecole pratique d'industrie ...	30	11	4
Nancy	Association Lorraine d'assist- ance par le travail	100	193	66
Lorient	Ecole de rééducation profes- sionnelle des mutilés ...	52	117	52
Nevers	Centre de rééducation profes- sionnelle	80	86	36
Boulogne S/Mer	Ecole de commerce	40	49	19
Calais	Ecole professionnelle de mutilés	100	76	35
Clermont- Ferrand	Ecole professionnelle des blessés de la guerre	118	221	103
Thiers	Ecole de rééducation profes- sionnelle	30	24	12
Clermont- Ferrand	Centre d'appareillage et de rééducation	—	160	81
Pau	Ecole de rééducation profes- sionnelle	70	71	25
Lyon	Ecole des mutilés du Ministère de l'Armement	90	97	51
Do.	Ecole de rééducation profes- sionnelle du centre d'ap- pareillage	—	—	—
Do. Villeurbanne	Ecole Galliéni	80	217	62
Do. Calluire	Ecole Général Maunoury ...	60	81	50
Do.	Société d'enseignement pro- fessionnel du Rhône ...	—	—	—
Do.	Ec. le professionnelle de blessés Joffre et de Tourvielle ...	365	527	268
	A eporter	4,921	7,902	2,759

LOCALITÉS.			Nombre de Elèves.		Présents le 1 juil. 1917.
			Effectif prévu.	Passés du 30 juin 1916 au 1 juil. 1917.	
		Reports	4,921	7,902	2,759
Macon		Ecole Général Pau	70	110	56
		Œuvre des mutilés de la guerre	—	—	—
Cluny		Ecole Nationale d'Arts et Métiers	—	—	—
Le Mans		Comité d'Aide aux Sarthois mutilés	—	—	—
Chambéry-Cognin		Section de rééducation professionnelle des blessés de guerre	100	23	23
Anneey		Ecole de rééducation des mutilés	80	92	50
Cluses		Ecole Nationale d'horlogerie...	61	78	60
Paris		L'Aide Immédiate aux Invalides	—	163	43
Do.		L'Art et la Femme	50	116	35
Do.		L'Atelier	60	123	41
Do.		Le Jouet de France	—	—	62
Do.		Les Blessés au Travail	—	—	—
Do.		Chambre Syndicale de la bijouterie-joaillerie	20	9	—
Do.		Chambre Syndicale de la bijouterie fantaisie	70	73	13
Do.		Chambre Syndicale des bourreliers... ..	—	—	—
Do.		Chambre Syndicale des Chausseurs	130	215	36
Do.		Comité des industries des vêtements... ..	—	—	—
Do.		Ecole des Mutilés de la Fédération Nationale	80	249	66
Do.		Ecole dentaire française	17	17	—
Do.		Fondation Marcel Hirsch	—	—	—
Do.		Le Jouet Lozérien	—	—	—
Do.		Maison du Soldat du XIII ^e arrond ^t	—	158	27
Do.		Ecole des Mutilés de l'Office Départemental de la Seine...	250	—	—
Do.		Société pour l'apprentissage des métiers du bâtiment	—	—	—
Do.		Hôpital-Ecole de Mutilés	—	—	—
Do.		Atelier du Blessé	—	—	—
Do.		Association Nationale des Mutilés	5	7	—
Do.		Ecole professionnelle de coiffure	—	58	12
Do.		Ecole de reuvre des mutilés	30	45	7
Do.		Union des Colonies Etrangères: 28, Quai Debilly	100	254	85
		Grand Palais	400	942	212
		Hôpital V-G-83, 6, B ^d des Invalides	60	53	37
		Totaux			

LOCALITÉS.		Nombre des Elèves.		Présents le 1 ^o juil. 1917.
		Effectif prévu.	Passés du 30 juin, 1916 au 1 ^{er} juil. 1917.	
	Reports ...			
Montrouge ...	Ecole Rachel	65	213	53
Saint-Maurice ...	Institut National Professionnel	350	727	216
Rouen	Ecole de rééducation professionnelle	125	228	89
Le Havre ...	Ecole de rééducation professionnelle	80	88	66
Elbeuf	Ecole pratique d'industrie ...	10	17	5
Neuilly S/Marne	Maison Blanche (U. des C.E.)	350	1,692	239
Niort	Ecole de rééducation professionnelle	—	—	—
Amiens	Association régionale de la Somme	—	72	20
Albi	Œuvre tarnaise de rééducation professionnelle	—	65	25
Limoges ...	Centre de rééducation professionnelle	210	324	169
Do.	Le Jouet français	—	—	—
Bayonne ...	Centre de rééducation professionnelle	50	64	24
Alger	Ecole de rééducation	—	—	—
El Kouba ...	Centre de rééducation professionnelle	300	258	197
Oran	Ecole Victor Vassal	80	65	19
	Totaux	8,124	14,500	4,746

RECAPITULATION.

	Nombre des Elèves.		Présents le 1 ^o juil. 1917.
	Effectif prévu.	Passés du 30 juin 1916 au 1 ^o juil. 1917.	
Ecoles pour aveugles	698	896	398
Ecoles de rééducation agricoles	1,170	1,790	581
Ecoles de rééducation générale	8,124	14,500	4,746
Totaux généraux	9,992	17,186	5,725

Nota.—Les écoles pour lesquelles aucune indication n'a été portée dans les Tableaux sont de création récente, ou n'ont pas répondu aux questionnaires qui leur ont été envoyés.

Professions enseignées.—Une centaine de professions différentes sont enseignées dans ces écoles. La plus demandée est celle de cordonnier (2,138 apprentis au 31 juin 1917) qui éduite les blessés, parce qu'elle leur permet souvent d'aller s'établir dans leur pays d'origine et de s'occuper encore un peu de culture, comme beaucoup d'entre eux le faisaient avant la guerre. Cette tendance démontre, que si beaucoup d'anciens cultivateurs se détournent de l'agriculture, c'est surtout parce qu'ils se rendent compte, non sans raison d'ailleurs dans la majorité des cas, que leurs infirmités les empêcheront de gagner un salaire suffisant, dans une profession déjà peu lucrative au temps de la paix. Telle est la principale cause qui éloigne l'invalidé des écoles d'agriculture, vers lesquelles on fait cependant de grands efforts pour les diriger.

La statistique nous apprend que 14.5 pour cent des élèves des écoles se sont dirigés vers les professions agricoles (pourcentage extrêmement bas, si l'on le compare à celui des cultivateurs blessés), 16.6 pour cent vers les professions libérales, administratives ou commerciales et 68.9 pour cent vers les industries de tous genres.

Faisons observer que beaucoup d'invalides entrent dans les écoles pour compléter leur instruction primaire ou générale, afin de concourir pour des emplois administratifs ou suivre ensuite des cours commerciaux. En réalité cette instruction ne peut être considérée comme l'apprentissage d'une profession. Aussi ne la faisons-nous pas entrer en ligne de compte dans les évaluations ci-dessus.

Placement.—Le placement se fait en général avec la plus grande facilité quand le mutilé est vraiment apte à exercer la profession choisie. Aussi est-il difficile d'accorder une grande confiance aux chiffres donnés par les statistiques officielles, qui admettent que seulement 54 pour cent des élèves passés par les écoles professionnelles, seraient placés dans la carrière qu'ils ont adoptée. De nombreuses causes d'erreurs rendent ce chiffre suspect. En effet, d'un côté beaucoup d'élèves sont portés comme placés dans leur profession, qui l'abandonnent ensuite, parce que cette profession ne convient pas réellement à leurs aptitudes. D'autres trouvent des situations différentes qui les attirent à tort ou à raison. Un grand nombre d'invalides restent trop peu de temps dans certaines écoles, pour connaître et pratiquer leur métier; il n'est pas dès lors très étonnant que leur placement présente quelques difficultés.

Le chiffre de 54 pour cent pour les placés ne correspond certainement pas à la réalité et nous sommes convaincus que le placement effectif et durable, qui suit une rééducation rationnelle et complète, doit atteindre au moins 80 pour cent des rééduqués. S'il en était autrement, c'est que l'organisation de l'enseignement des écoles serait en général défectueux et il importerait qu'elles soient transformées et améliorées. Nous avons de bonnes

raisons de penser qu'il n'en est pas ainsi dans la majorité des écoles ouvertes en France.

Ajoutons encore quelques renseignements :

Pour les 78 écoles qui ont donné seules des renseignements suffisants au 30 juin 1917 :

Le personnel administratif comprenait	278 personnes
Le personnel enseignant	868 „
<hr/>	
Au total	1,146 personnes
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Dépenses.—

Dépenses du personnel	708.427,62
Dépenses de nourriture et d'entretien ...	2.125.425,07
Achat d'outillage	829.564,40
Achat de matières premières	836.509,49
Divers	722.681,22
<hr/>	
Total	5.574.832,66
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Recettes.—

Produits des libéralités, souscriptions, etc.	3.142.738,16
Remboursements sur allocations ...	285.066,65
Vente de produits fabriqués	823.510,31
Subventions	
Etat	1.755.489,75
Départements	563.895,15
Communes	163.365,66
Divers	231.217,51
<hr/>	
Total	6.965.283,19
<hr/>	

Il n'est pas sans intérêt de remarquer que la vente des produits manufacturés donne une somme inférieure à celle des dépenses pour l'achat de matières. Ce qui indique que, d'une manière générale, les écoles ne cherchent pas à réaliser un bénéfice dans la vente des produits manufacturés, mais que l'enseignement professionnelle reste, à juste titre, le souci dominant des administrateurs.

Nous ne pouvons terminer ce rapide exposé de la situation actuelle de la rééducation professionnelle des invalides de la guerre en France sans constater, avec satisfaction, que l'idée de rééducation a fait de réels progrès depuis l'année 1916.

Aussi, en raison de cet afflux de candidats et des résultats cependant excellents, obtenus dans l'enseignement tel qu'il a été pratiqué jusqu'ici, paraît-il indispensable d'apporter diverses améliorations dans les méthodes employées.

Il y a d'abord lieu de craindre que la multiplication indéfinie des petites écoles locales ne soit pas sans inconvénients tant au point de vue des dépenses qu'au point de vue de l'enseignement. Nous pensons qu'il vaudrait mieux développer et créer, s'il y a lieu, des écoles régionales suffisantes pour recevoir les invalides de plusieurs départements, de manière à rendre plus facile la direction générale et le contrôle technique et financier de ces établissements.

Nous croyons surtout, que le moment est venu d'ouvrir des écoles ou des sections spéciales dans les écoles existantes, pour y admettre certaines catégories d'invalides, susceptibles de recevoir une instruction professionnelle d'un niveau plus élevée que celle qui est donnée actuellement. En effet, si l'on songe qu'à côté des mutilés auxquels leurs graves blessures, ou leurs connaissances restreintes, ou leur médiocre développement intellectuel, ne permettent que l'apprentissage des métiers les plus faciles et les plus communs, il en est d'autres que leur éducation, leur esprit éclairé, leurs infirmités plus légères et leurs aspirations plus hautes, désignent pour aborder avec succès un enseignement technique supérieur. Tous ceux qui s'occupent de la rééducation des invalides sont unanimes à constater avec quelle rapidité les blessés acquièrent, aussi bien une extraordinaire habileté manuelle, que des connaissances théoriques et scientifiques qu'on avait quelque crainte de leur voir assimiler avec peine. Il y a chez tous une maturité d'esprit, résultat des épreuves qu'ils ont subies, une volonté d'apprendre, qui font que leur instruction professionnelle se poursuit dans un délai des plus courts et qui n'a rien de comparable avec la durée des études dans les écoles professionnelles ordinaires. Il semble donc qu'avec de pareils éléments, on pourrait facilement organiser des écoles d'ordre agricole, commercial, industriel et administratif, dans lesquelles on préparerait une élite de jeunes gens, qui pourraient aspirer aux carrières les plus brillantes et rendraient les plus signalés services, dans les diverses branches de l'activité économique d'un peuple. Nous sommes convaincus que dans un délai de deux ans, y compris une période préparatoire de trois à six mois, on pourrait obtenir de merveilleux résultats chez un grand nombre d'invalides.

Faut-il ajouter que la création d'écoles supérieures spéciales n'entraînerait nullement la suppression des écoles ordinaires qui, répétons-le, rendent des services indiscutables? Les unes seraient seulement le complément des autres et permettraient l'utilisation intégrale et rationnelle des forces de production considérables que représentent nos valeureux invalides.

Il semble aussi très intéressant de créer des écoles interalliées, dans lesquelles seraient admis des invalides désireux d'apprendre la langue et de s'initier aux méthodes commerciales et industrielles en usage dans les pays alliés. On pourrait faire ainsi un échange d'élèves entre les blessés des différentes nations et cette collaboration sur le terrain économique, contribuerait à maintenir entre les peuples qui versent leur sang pour le droit et la liberté du monde, une collaboration aussi cordiale, aussi loyale et aussi fructueuse, que celle qui les a unis sur le champ de bataille.

Il y a là de nouvelles et intéressantes matières à étudier et des problèmes des plus passionnants à résoudre. Ils sont dignes de retenir l'attention de tous ceux qui se préoccupent de l'avenir de nos invalides et de la reconstitution économique et sociale de nos pays.

Telles sont les conclusions auxquelles nous amène l'examen de la rééducation professionnelle des invalides de la guerre en France à la fin de juin 1917. Cette activité ne s'est pas ralentie depuis lors, car le nombre des blessés augmente tous les jours et la France continue, avec la même ferme volonté, à se préoccuper de l'avenir de nos braves mutilés et estropiés.

LA REEDUCATION DES MUTILES DE LA GUERRE.

Par Dr. LE BRUN.

Les questions relatives au traitement médical, à la réadaptation, à la rééducation fonctionnelle et professionnelle des mutilés de la guerre, constituent des questions—hélas!—toujours d'une grande actualité et d'importance sans cesse croissante. Plus de trois années de guerre leur ont fourni des réponses bien différentes, qu'il s'agit aujourd'hui de codifier quelque peu, grâce aux leçons de l'expérience, très fécondes et ayant profondément modifié les attitudes de ceux qui ont eu à les soulever.

Entre toutes ces questions, celle du travail de l'invalidé, connue sous le nom de rééducation professionnelle, a fait l'objet de maintes discussions, de maints articles de journaux tant politiques que médicaux et surtout de nombreuses erreurs reposant sur l'exclusivisme de telle ou telle autre méthode.

À l'origine, la philanthropie fut seule l'instigatrice des premiers dépôts d'invalides où l'on cherchait à la fois de guérir le blessé et de le consoler dans son infortune.

Ce fut un élan magnifique de générosité et de dévouement. Ces œuvres florissantes et belles, nées d'une pensée de charité, fussent restées florissantes et belles si l'impitoyable guerre ne leur eut fourni constamment de nouveaux contingents. Ceux-ci furent causes des difficultés financières, capitales pour leur existence.

Ne pouvant faire toujours appel à la charité, au désintéressement des fondateurs et des donateurs, on résolut d'occuper les mutilés à des travaux pouvant être rétribués.

Telle fut en maints endroits l'origine de la rééducation professionnelle. D'ailleurs pour s'autoriser d'une telle création on prit pour prétexte de donner aux hommes la distraction du travail, de leur procurer—tout en les faisant bénéficier d'un salaire—l'occasion de manifester leur reconnaissance. . . . car il était pénible d'avouer que l'on faisait travailler pour subsister.

Quels sont nos griefs contre cette prétendue rééducation professionnelle, qui, hâtons nous de le dire, n'est pas universelle. 1°. Conçue ainsi, elle ne peut être sérieuse, puisqu'on n'est pas uniquement guidé par le bien de l'homme mais en grande partie par l'intérêt.

2°. De travail productif—justement parce qu'il est une source de revenus—s'est développé de façon anormale au point de prendre plus d'importance que le traitement médical.

L'inévitable conséquence fut d'écarter de nombreux blessés de ces instituts. En effet, ceux qui s'y trouvaient virent leur séjour s'allonger indéfiniment, le traitement n'étant pas suffisamment intense et suivi, conséquence inévitable du désir des hommes de s'éterniser dans des instituts où s'écoulaient, loin du danger, les jours faciles et rémunérateurs. On vit même certains sujets retenus plus que de raison—je n'ose dire après guérison—parce que très habiles dans leur métier.

En résumé, le traitement fut diminué, les admissions furent restreintes et du fait de l'attente prolongée, les entrants furent moins aptes à subir le traitement, leurs lésions étant plus anciennes, moins curables.

De se qui précède, une question se pose, immédiate : Pourquoi réunir dans un même institut sous une direction unique, deux sections franchement différentes, souvent même incompatibles : la section médicale et la section professionnelle proprement dite.

Si je pose la question de séparation, j'en connais par avance les difficultés et les objections. Certes, l'œuvre accomplie à ce jour est bien belle, la rééducation professionnelle a fourni de superbes résultats mais j'affirme que sa mise en pratique a été souvent précoce, parfois nuisible à la guérison du mutilé, but primordial, et c'est pour cette raison, cette unique raison que je demande la séparation.

À l'appui de ma thèse, j'apporte deux exemples suffisamment typiques :

1°. Qui n'a vu dans des ateliers, comme ceux des broisseurs, de pauvres estropiés de la main, s'évertuant malhabilement au travail, ne demandant au membre lésé que le minimum d'exercice, tandis que les conseils du médecin eussent exigé le contraire. D'autres fois ces mouvements forcés se font dans les conditions les plus défectueuses au point de vue des organes.

2°. La guérison obtenue, au moins partiellement, on voit ces malheureux continuer durant la guerre ce métier sans avenir, appris à l'Institut, uniquement parce qu'il rapporte actuellement de gros salaires. On sacrifie l'avenir au présent.

La cause de ce double errement c'est la méconnaissance ou plutôt l'oubli de notre devoir vis à vis de l'infortuné qu'on nous envoie.

Nous devons : 1°. Le *guérir* en lui rendant l'usage aussi normal que possible de ses membres et, quand cela ne se peut, un usage au moins rationnel, afin d'atténuer en lui le préjudice que lui a causé sa blessure.

Cette guérison doit être poussée très loin, à sa limite : les intérêts de l'homme lui-même et de la Patrie nous en font un devoir : c'est le *devoir médical*.

2°. Le *rééduquer*, c'est à dire le préparer aux luttes de l'avenir pour l'apprendre à pouvoir se suffire à lui-même, à tracer son sillon en ce monde : c'est le *devoir social*.

Or le devoir social—malgré toute son importance—suit le devoir médical; en aucun cas il ne doit le précéder moins encore l'entraver.

Le premier réclame évidemment le secours des pouvoirs ou des philanthropes, secours pécuniaire et moral; le second peut—je ne dis pas qu'il doit—espérer en ses propres moyens d'existence.

Les objections à la séparation sont nombreuses. Elles sont desformulées principalement par les gens de métier et parfois sous des formes assez convaincantes; je n'en indiquerai qu'une, la plus importante :

“ Supprimer les métiers c'est habituer les hommes à l'oisiveté, en faire des désœuvrés; ce n'est rien moins qu'immoral ! ”

Le plaidoyer me paraît quelque peu forcé et trop noir, sous une apparence de vérité. Si je préconise la séparation, je suis loin de réclamer la suppression du travail à l'institut médical; au contraire, je demande que ce travail ne soit pas lui-même sa *fin*, mais qu'il constitue un traitement et qu'il s'exerce dans certaines conditions. Voici ce que j'écrivais à ce sujet au début de 1917 et qui fit l'objet d'un rapport présenté à la Conférence interalliée pour la rééducation professionnelle en mai 1917 :

“ *La rééducation fonctionnelle s'accomplit :*

“ 1°. *À l'institut de physiothérapie*; chaque jour l'invalidé y passe un temps déterminé pour y faire des exercices gradués, sous la direction du médecin attaché à ce service. C'est là, la raison d'être de l'Institut des Invalides.

“ 2°. *À l'atelier*; le métier peut et doit être un moyen de contribuer à la rééducation fonctionnelle. Par le jeu de l'outil, le mutilé fait travailler des muscles plus ou moins lésés; il les soumet à une sorte de gymnastique qui transforme le travail d'atelier en une mécanothérapie.

“ C'est pour ce motif que nous recommandons vivement à nos moniteurs de veiller sur leurs élèves pour que ceux-ci actionnent toujours leurs muscles atrophiés et leurs articulations semi-ankylosées. Nous leur demandons aussi de ne pas être trop exigeants dans la besogne à réclamer. Nous faisons un devoir à celui qui est chargé de l'enseignement de s'assurer par lui-même de l'exécution de ces conseils.

“ De plus en plus ayons une conception élevée du métier et faisons—en un adjuvant thérapeutique.”

Revenons-en à la séparation et reprenons l'exemple du mutilé de la main; parésie ou paralysie d'un nerf, troubles trophiques, impotence plus ou moins complète. . . . Cet homme ne doit relever uniquement que du médecin à qui incombe le soin de lui rendre dans un avenir aussi rapproché que possible l'usage d'une fonction lui permettant de reprendre son ancien métier ou d'apprendre ultérieurement un métier qualifié.

J'ai l'horreur de ces vagues artistes, miniaturistes, pyrogravurs, peintres sur porcelaine etc. . . . dont une main pend

lamentablement tandis qu'un traitement bien approprié leur eut rendu l'usage au moins partiel de ce membre.

Les exemples pour moi, sont nombreux de sujets qui eussent pu être préservés de parésies, de raideurs articulaires, de déviations, de rétractions cicatricielles qui les ont définitivement classés parmi les impotents.

La séparation des instituts suppose une distinction essentielle parmi les invalides et les divisant en deux classes :

1° les définitivement inaptes a tout service militaire.

2° les momentanément inaptes dont le retour a l'armée de campagne ou auxiliaire est certain.

Cette manière de voir a été parfaitement exprimée par mon distingué confrère le médecin de Bataillon Van Roy, dans un article paru dans les Archives Médicales Belges de Décembre, 1917.

Je ne puis résister au plaisir d'en citer les passages principaux, confirmation de la thèse que j'ai toujours défendue :

“ Quels sont les buts, dit le Dr. Van Roy, auquel tend la rééducation des blessés ?

“ 1° Récupérer pour l'armée, lorsqu'il s'agit de mutilés curables au point de vue fonctionnel. A cet effet, on doit rechercher la manière de rendre aux parties lésées, et cela dans le plus bref délai possible, tous les mouvements.

“ 2° Récupérer pour la vie civile lorsqu'il s'agit de mutilés qui à la suite de leurs blessures seront atteints d'une perte fonctionnelle permanente rendant leur retour à l'armée impossible. On recherchera les méthodes à employer pour les rendre dans les meilleures conditions a la vie civile.

“ I Dans le premier cas, on créera des instituts où l'on n'admettra que des récupérables. Les grands blessés n'y sont pas à leur place. Ils font perdre du temps précieux au personnel, sans bénéfice aucun pour l'armée et souvent pour eux-mêmes.

“ On a eu tort de donner à cette restauration fonctionnelle le titre de rééducation professionnelle : ce n'est pas un motif parceque on y exerce une profession que telle doit être la dénomination.

“ Cette restauration doit être entreprise le plus tôt possible après le traitement chirurgical et aller de pair avec le traitement de physiothérapie (gymnastique médicale, massage, mécano-thérapie, électrothérapie, bains d'air chaud, &c.).

“ Cette rééducation fonctionnelle par le travail, combinée surtout avec la gymnastique doit donner, si elle est bien conduite, d'excellents résultats.

“ J'insiste encore sur la question trop négligée, à mon avis, qu'il faut pratiquer cette restauration dans des institute où ne

“ seraient admis que des récupérables pour l'armée et cela le plus tôt possible après la période chirurgicale proprement dite.

“ Le but de cette restauration étant exclusivement médical la formation d'un bon ouvrier n'étant pas recherchée, la direction doit en être assurée par un médecin.

“ Inutile de dire que des ouvriers spécialisés dans différents métiers doivent être mis à sa disposition pour guider le blessé dans son travail; asurement leur rôle ne peut être primordial, le but n'étant pas professionnel.

“ II. Dans le second cas (blessés non récupérables) il ne faut envisager que l'après guerre; la question prédominante doit être de permettre au blessé de reprendre sa situation antérieure dans la vie, ou une situation équivalente.

Conclusions.

Je me résume, en soumettant aux discussions de tous ceux qu'intéressent le sort de nos braves soldats blessés, mutilés ou invalides de la guerre, les deux points suivants :

1° création d'instituts physiothérapiques avec ateliers de travail, *sans aucun but professionnel* pour les récupérables par l'armée. Ces instituts dépendraient et seraient sous le contrôle direct et unique du Ministre de la Guerre par l'intermédiaire du Service de Santé militaire, responsable.

2° création d'instituts de rééducation professionnelle pure pour mutilés dont le retour ultérieur à l'armée est peu ou pas probable. Ces instituts seraient des œuvres sociales privées ou sous le contrôle de l'Etat.

HOW CAN THE AMERICAN Y.M.C.A. SERVE DISABLED SOLDIERS.

By J. GUSTAV WHITE, Educational Secretary in Foreign Department; International Committee of Young Men's Christian Association of North America; Educational Secretary with American Expeditionary Forces in Great Britain.

EXPLANATORY NOTE.

On March 25th the following cablegram from the International Committee was received :—

“ White 27 Russell Square London W.C.1.”

“ Consult Ambassador regarding conference on treatment disabled soldiers to which on invitation State Department we have designated you our representative. Desirable you submit suggestions before April first.—
“ HIBBARD.”

Two considerations may have influenced the Department of State of the United States to invite the American Young Men's Christian Association to be represented in this Conference :—

- 1st. The Y.M.C.A. is already on active service with American soldiers in the home cantonments and overseas.
- 2nd. This widespread organisation has large resources in America—resources of trained leadership, tested methods, equipment and proven financial support. And, of course, in war time the resources of organisations as well as those of individual citizens should be made available to the Government.

In view of the conspicuous war service rendered by the British and Colonial Y.M.C.As. our national authorities have a right to expect large service from the American Y.M.C.A., a service which should begin with enlistment and end only when the discharged soldiers have again been absorbed into normal community life. Particularly should the American Y.M.C.A. be expected to be of large practical service, when it is remembered that for over 50 years this association has been enrolling and serving with increasing success the same kind of men that are now in khaki. The acceptability of the Y.M.C.A. to all types and classes of men is conclusively shown by a cursory analysis of its 700,000 members. 75,000 are students and professors, 125,000 are railroad men, 100,000 are industrial men, 18,000 are rural or county members, 15,000 are negroes, 3,000 are Indians. (Cf. Note.) 361,000 members are drawn from the various com-

mercial classes of the cities, the remaining 3,000 of the total membership belong to the Army and Navy division—illustrating, especially in this last case, the principle that Y.M.C.A. service is not limited to members.

Since the mobilisation of Y.M.C.A. forces to serve soldiers and sailors during the Spanish-American War, the Association has been extending its work into the annual National Guard encampments and was entirely ready to leap into the much larger service which the new army created when the United States entered the World-War. This adaptation to the needs of young men is an inherent characteristic of the Y.M.C.A. It was one of the qualities which justified the Government placing into the hands of this Association the caring for its workers who built the Panama Canal.

The International Committee of the Y.M.C.As. of North America has been privileged to send secretaries and funds to successfully plant Y.M.C.As. in nearly 100 foreign centres in twenty different non-Christian lands—another testimony to the adaptability of the movement. In view of these facts one is perfectly justified in saying that Y.M.C.A. service to disabled soldiers will prove to be but another adaptation of its widely varied work.

Having noted the adaptability of the Y.M.C.A. to the needs of all young men, let us now take inventory of its resources with a view to determining how these resources might be utilised by the nation for the benefit of disabled soldiers.

Before the war there were 4,103 Y.M.C.A. secretaries employed in 3,000 centres in North America. This total does not include office clerks, stenographers nor caretakers. Since the war the number of secretaries has been practically doubled. Here, then, is available an administrative machine set up and in full running order. Most of the 4,000 Y.M.C.A. secretaries were especially trained for this work. While the Y.M.C.A. triangle represents the three sides of man symmetrically developed, *i.e.*, body, mind and spirit, it might also fitly symbolise three phases of service generally rendered to young men, guiding them into their right occupation, training them for it and placing them in it. "Find yourself" campaigns have stimulated many youths to consider thoughtfully their choice of occupation, life-work meetings have been a feature of largely attended student conferences for two decades, while many secretaries not directly responsible for "Vocations" or "Employment" bureaux in Y.M.C.As. are nevertheless called upon daily to give occupational guidance. This phase of Y.M.C.A. work is based upon the needs of the individual. It is not a mass system of handling men and is successful because of the personal human touch—a thing which is often very difficult to secure in public and governmental

NOTE.—The figures quoted in this paper include Canada, which has 1/25 of the whole number of Y.M.C.As. in North America.

bureaux. The record of 65,000 men placed in employment last year means much more than securing employment for 65,000 men.

Among the 4,000 employed officers are 142 educational secretaries. Almost without exception these are University trained men, but they are also trained to appreciate the point of view of the 98 per cent. of men who never enter college. This class largely compose the Y.M.C.A. student body of 85,000 men who were enrolled last year in the 450 Y.M.C.A. schools. At least, 85 per cent. of the 5,000 paid instructors are drawn from practical life and most of them teach occupational subjects. The following incomplete list of classes illustrates the scope of instruction offered in Y.M.C.A. schools :—

Commercial Section :

- Accounting in preparation for degree of Certified Public Accountant.
- Advertising and Publicity.
- Bookkeeping.
- Business Arithmetic.
- Business English.
- Commercial Art.
- Commercial Law.
- Efficiency Principles.
- Finance.
- Foreign Trade.
- Salesmanship.
- Stenography and Typewriting.

Technical or Industrial Section :

- Acetylene Welding.
- Agriculture : Truck Gardening, Poultry Raising, Fruit Growing.
- Applied or Vocational Mathematics.
- Automobiling : Shop and Road Work.
- Building Construction : Building Superintendence ; Drawing : Architectural, Mechanical, Topographical.
- Electricity.
- Industrial Chemistry.
- Interior Decorating.
- Lead Burning.
- Machine Shop Practice.
- Metallurgy.
- Motion Picture Operating.
- Motor Boating.
- Navigation.
- Photography.
- Plumbing.
- Sign Painting.
- Shoe Designing.
- Surveying.
- Vulcanising.

Academic or Cultural Section:

Civics and Naturalisation.

English : Grammar, Composition, Literature. Special elementary courses for beginners, including non-English speaking foreigners.

Fundamentals of Art.

History : American, European, General.

Languages : French, German, Italian, Spanish.

Law, Professional preparation for the.

Mathematics : Algebra, Geometry, Trigonometry, Calculus.

Memory Training.

Music : Instrumental and Vocal, Individual and *en masse*.

Occupational Guidance.

Public Speaking.

Science : First Aid, Chemistry.

Of the 85,000 students enrolled in one school year, fully 70,000 were of the same age and from the same occupations as the new American soldiers, the remaining 15,000 being either above or below draft age. 90 per cent. of them came to school at night after working all day, and they paid 75 per cent. of the cost of their tuition. I know of no other widespread organisation or educational institution in the United States which has been so successful in attracting employed men into educational classes, especially for occupational studies. Necessarily, the instruction given has had to satisfy the students and produce practical results. This led to the development of a so-called Y.M.C.A. method of instruction of which some features are :—

1. Recognition of varying degrees of proficiency among students and provision for corresponding adjustments. Men differ as to the amount of their previous schooling, the amount of leisure for home preparation and the regularity of attendance due to employment or family obligations. This involves allowing each student to progress at his own rate of speed which, in turn, involves much individual instruction. Consequently, classes are small, the average being nearer 8 than 15. Just enough class instruction given on general topics to maintain interest and comradeship in study.
2. Enrolment of new students in a class at frequent intervals. In some classes it is permitted to enter as a new student at any time desired.
3. Small units of instruction material. Sometimes this involves the preparation of special text pamphlets of pocket size with a question page summary for each pamphlet.

Perhaps the last two points can be best illustrated by this brief history of an automobile class.

When eight men signed the roll for studying automobiling the class started. After four lessons two men students joined the

class, at the sixth lesson another joined, at the tenth lesson three more. Meanwhile, four men had been obliged to leave the class, half of the original number. Under the usual system a class of four might have continued to the end, but more likely all might have become discouraged and discontinued the study. But by the unit system, the growing class continued with enthusiasm.

This was the teaching method. A three months' course was outlined. The instructor first gave a very short series of lessons on the types of modern automobiles, then took up a series on the two-cycle and four-cycle engine; the next series of lessons was on power transmission (from the engine to the wheels), then come various series on carburetors and fuels, lubrication, bearings, clutches and brakes, electric systems, wheels and tyres, simple repairs, &c. At the beginning of any series a new student could begin without having taken the preceding series, though he was expected to read a short synopsis. An examination tested the mastery of each series.

As soon as the last of the originally planned series of lessons was reached the instructor began at once with the first again, so that the class really never closed. Each student stopped when he reached the point in the cycle at which he commenced. New students were enrolling and others finishing their cycle of study nearly every week. An additional interesting feature of this class was that students who had finished the course could repeat it if desired or if they wished to help some of the new students to a better grasp of the subject. Many took advantage of this plan and more solidly fixed in mind their newly acquired knowledge.

Alongside of this illustration of modern adaptation it is interesting to note that several Y.M.C.A. Law Colleges and one Pharmacy School are officially recognised by their respective States as qualified to grant degrees and send their graduates out into practice, even without State examinations. Twenty Y.M.C.A. schools offer accountancy instruction in preparation for certified public accountants' examinations. These professional courses necessarily extend over a period of years.

A number of subjects like automobiling, salesmanship, foreign trade were first taught in Y.M.C.A. schools, giving point to this remark of Dr. E. E. Brown, United States Commissioner of Education :

"The Y.M.C.A. in its educational work has been the
"vanguard of our educational movement and is yet destined
"to perform great pioneer service."

One simple reason for its ability to render pioneer service is that it is free and unhampered. It is not a part of the Government school system, which wisely adjusts more slowly to changing conditions.

Naturally the 450 Y.M.C.A. schools in North America have an equipment of libraries, class rooms and apparatus, but, since more than 75 per cent. of the students attend the evening classes,

most of this equipment is not used in the day time. It would, therefore, seem that these Y.M.C.A. resources of organisation, teaching methods and equipment might be both available and highly desirable for helping to train disabled soldiers.

Now let us see what the physical department of the Y.C.M.A. might contribute. Of the 788 Association buildings in America, 301 have athletic fields, while 728 have well-equipped gymnasiums attended by over 450,000 members. The larger Association buildings also have swimming pools, Turkish baths and an increasing amount of apparatus for special exercise.

The 800 trained physical directors appreciate the problems of medical gymnastics which are so vitally related to the question of serving soldiers after their discharge from hospitals. Health-giving exercise, gymnasium games, swimming, health talks by physicians, all go to round out the full programme of the "body" side of the red triangle, while 453 dormitories and 246 restaurants also help to care for the physical needs. Practically all this equipment and leadership might be available for disabled soldiers if the Government deemed it advisable.

On the spiritual and social side of the triangle a wide latitude is noticed. The 49,640 special events of a year—extending from formal receptions to indoor circuses—do not indicate the continuous good fellowship which grows spontaneously in a Y.M.C.A. atmosphere. Catholics, Protestants, Jews, non-believers all feel perfectly at home in a Y.M.C.A. building. One is pleased to remember that the motive-power which keeps the whole Association movement going is the Christ spirit of service. And it is gratifying to note that 152,350 members voluntarily enrolled in Y.M.C.A. Bible classes in one year. But absolute freedom of religious thought is the rule and practice in American Y.M.C.As. The ideal for each Y.M.C.A. man is symmetrical development of spirit, mind and body. The grouping of equipment in one building helps to carry out this ideal. Thus, if a disabled soldier were in a modern American Y.M.C.A. building, he would find incentive to develop physically, mentally and morally; would find provision for sleeping, eating, playing, studying all in the same building in a man's club atmosphere of normal life. He would not feel himself side-tracked into a special section of the world like an asylum where he might be pitied and patronised.

All this Y.M.C.A. equipment and organisation in the United States belongs, in a peculiar sense, to the American public. Practically the entire cost of the one hundred million dollars' worth of property owned by the American Y.M.C.A. was given by public subscription. To this, \$12,000,000 was being added annually at last reckoning. Before the war the annual current expenses amounted to \$16,461,500, of which 25 per cent. represented annual public gifts. The enormous public subscriptions of over \$50,000,000 given within the last 12 months for Y.M.C.A. work among soldiers brings tremendous additional responsibility upon the Association. Over 1,200 secretaries are now overseas

with the troops and more are arriving every week. The question is: How can this organisation, its funds, equipment, methods and men serve disabled soldiers? The following procedure is only suggestive. I regret that the short notice given for the preparation of this paper precluded full conference with my colleagues in France and America, and also precluded previous conference with the interested military authorities and officials of the American Red Cross with whom the American Y.M.C.A. has the most cordial working relations. Nevertheless, these suggestions may prove a basis for discussion.

What Can be Done Overseas?

Just as soon as physical suffering ceases to engage the full attention of a disabled soldier and he begins to think about the future, just so soon should our program of service begin. In harmony with the wishes of attending physician, and in co-operation with Red Cross officials, the visiting Y.M.C.A. secretary and trained volunteer visitors should begin their propaganda of hope and inspiration. For this purpose they should be supplied with the following material which can be produced by experienced educational secretaries and their skilled associates in America:—

1. *Inspirational brochures* illustrating the results attained by cripples and other men disabled like our soldiers. The best brains experienced in producing attractive and persuasive school announcements should be put to work on this at once.
2. *Biographies* of men who have won in spite of great physical handicaps.
3. *Circulars describing* pension and insurance awards and provisions for training. These should indicate the correlation between studies commenced overseas and the training centres' programme in America.
4. *Attractive posters* in the convalescent wards. These should be changed often enough to continually attract attention.
5. *Provisional enrolment* cards to be filled out subject to approval of the doctor and occupational advisor. These might be filed with the local camp Y.M.C.A. secretary to follow up.

The occupational advisor here referred to may be a Y.M.C.A. secretary or local trained volunteer who is conversant with the industrial, commercial, agricultural and other occupational needs of the community to which the disabled man will probably return. This general information given by attending physicians, nurses, the occupational advisors, should be supplemented by illustrated lectures, if available, but especially by carefully prepared monographs on the various occupations open to disabled men. The occupational advisor should be a man of experience and a good judge of men, able to secure and evaluate the facts pertaining

to each disabled soldier's experience, training, domicile, resources, &c. The Y.M.C.A. could render a splendid service by providing an adequate number of such capable advisors as well as by preparing the monographs.

As soon as the disabled man has signed a regular educational enrolment card and filed it with the local Y.M.C.A. secretary, he should be provided with readable books bearing on the occupation for which he wishes to prepare. Just as soon as permitted by the doctor, he should begin performing simple operations related to his occupation if this is possible. Individual and class instruction should be provided in Y.M.C.A. huts and other quarters while the disabled man is in convalescent camp or while awaiting transport, so as to lose no time and so as to combat the dangerous habit of idling.

In this connection it is illuminating to note in the report of British delegates to last year's conference on this subject, that experience shows that of the disabled soldiers who commence their re-education before leaving the hospital only 5 per cent. fail to continue their training after medical dismissal; while, of those who do not commence their re-education in hospital, 80 per cent. never report for training. Again, let me urge the importance of so correlating the educational work for American disabled soldiers that studies commenced in France or England shall fit into the programme provided at home. It will be worth while to anticipate his return by sending reports in advance to the training centre concerned.

Although I have no authority for indicating that such a course will be followed, the President of the United States might deem it wise to appoint a Disabled Soldiers Commission (perhaps more attractively named) to perform the following duties, in addition to others :—

1. Unify and correlate the work of the several Governmental Departments and Bureaux which are interested in disabled soldiers. The regulations governing disabled soldiers might well emanate from this Commission, even though it were deemed wise to leave its execution to one department or bureau. The weight of military or other recognised authority should be behind these regulations.
2. Define the boundaries of service for the various co-operating agencies or organisations. The Y.M.C.A. will, presumably, continue along the lines already authorised, especially overseas, but there may be other qualified organisations desirous of helping.
3. Correlate the training work begun overseas with training plans in America.
4. Designate the centres in the United States to be used for training disabled soldiers. In view of their availability and special resources, a half hundred Y.M.C.As.

might well be included in the list of training centres to begin with. To secure a wide distribution, the following Association plants are suggested as typical :—

Boston, New York, Brooklyn, Troy, Syracuse, Rochester, Buffalo, Philadelphia, Pittsburg, Wheeling, Erie, Baltimore, Washington, Richmond, Atlanta, Cleveland, Columbus, Dayton, Cincinnati, Louisville, Nashville, Memphis, Birmingham, Detroit, Grand Rapids, Milwaukee, Chicago, Minneapolis, St. Paul, St. Louis, Des Moines, New Orleans, Dallas, Ft. Worth, Kansas City, Houston, El Paso, Phoenix, Denver, Omaha, Fargo, Seattle, Portland, San Francisco, Sacramento, Los Angeles, San Diego.

All training centres should, of course, be selected upon the basis of their ability to deliver results. Of course the blind and totally disabled can best be handled in special institutions rather than in Y.M.C.A. Schools, Y.M.C.As. and other institutions considered should be able to show some experience in handling adult students and should offer facilities for quickly merging the disabled soldiers into normal society; they ought to have practice in occupational guidance and placement of men, and, finally, they should provide an uplifting atmosphere. It is taken for granted that the necessary dormitory, gymnasium and class room equipment is available in each centre selected. It is also taken for granted that this American Commission, like the British Pension Ministry, will not find it necessary to build special buildings in caring for disabled soldiers.

5. Supervise the work of all training centres to which Government aid is extended or to which soldiers are officially sent.
6. Promote the wise placement of disabled soldiers. The Y.M.C.A. should be asked to make their employment bureau service free to these men. The example of co-operation between the British Ministry of Labour and the Y.M.C.A. is worth studying on this point. Apparently the Government pays the bills and details Y.M.C.A. employment secretaries to do the work so as to insure the human touch and individual attention needed.

The Disabled Soldiers Commission might wisely include the following :—

1. Chairman, the United States Commissioner of Education.
2. Official Representatives of the War Department.
3. Official Representative of the Navy Department.
4. Official Representative of the Department of Agriculture.
5. Official Representative of the Department of Labour.

6. Chairman of the Advisory Educational Board for Disabled Soldiers. This Board should have representatives of the Association of College Presidents, of occupational, technical, agricultural and commercial schools as well as schools for the blind and maimed.
7. Official Representative of the Bureau of Pensions and Insurance.
8. A physician representing the American Red Cross.
9. A Representative of the Y.M.C.A. War Work Council.
10. Executive Secretary, charged with carrying out the policies adopted by the Commission.

At each training centre for disabled soldiers, a local advisory board should also be appointed on which a physician and educator, labour leader, employer and a disabled officer or soldier should have places. The executive officer of each local advisory board should be the head of the training centre. He should be appointed by the executive secretary of the National Disabled Soldiers Commission upon recommendation of the local board and be responsible to the national executive secretary.

While I do not speak officially in placing the resources of the Y.M.C.As. of the United States at the disposal of the Government, for serving disabled soldiers, in a sense it is but a detail of the offer already made and accepted. Here is the American Y.M.C.A. If our country can use it more fully, every Association will respond gladly.

REPORT ON THE TECHNICAL TRAINING OF DISABLED SOLDIERS AND SAILORS IN ITALY DURING THE PERIOD DATING FROM THE OUTBREAK OF WAR 1915 UP TO THE END OF 1917.

PRESENTED AT THE INTER-ALLIED CONFERENCE, LONDON, MAY,
1918, BY PROF. GIOVANNI CHEVALLEY.

The technical training for disabled soldiers and sailors in Italy is distinguished by three distinct features :—

- (1) Propaganda with regard to technical training, and the preparation and persuading of disabled men to go through with it;
- (2) Actual technical training (Technical Training Centres and Institutions);
- (3) Assistance given to disabled men on completion of technical training.

I.

The propaganda undertaken by the Italian Local Committees for the Assistance of Disabled Soldiers and Sailors has been made to cover a vast field, and has chiefly been done by means of the distribution of appropriate literature, of lectures and of the cinematograph, &c., so that the question of technical training for disabled men, with all its advantages, should be made clear not only to the men themselves, but also, and most especially, that the attention of all medical men, nurses, lady visitors to hospitals, and of all others who come in contact with the disabled men, be called to it.

The moral influence which was brought to bear on the disabled men, whilst they were in second-grade hospitals, during the preparatory stages for technical training, was also very useful. That is to say, some sort of occupation suitable to their condition of the moment, and to their surroundings, is contrived for them, and it has the effect of mitigating the depressing influence of the idleness in hospital wards, of encouraging self-control in the men, and, in some cases, manual work has proved useful in aiding the action of mechanical therapeutics.

The instituting of classes and work rooms in the hospital which is installed in the royal palace of the Quirinal, and is under the direct management of Her Majesty the Queen of Italy, has been a visible acknowledgement of the standard value of the moral element.

In the Castle of Moncalieri, as well, (near Turin), there has been instituted a hospital for disabled men, under the management of Her Imperial Highness, Princess Laetitia, Dowager Duchess of Aosta; here the men are engaged in the manufacture of toys, for which special workshops have been installed: they also go through courses of elementary instruction.

Nor, in this respect, must we fail to mention the actual training that has been accomplished by the Local Committee in Florence (Florentine Committee for Disabled Soldiers and Sailors), who have been the pioneers in their clever grafting of the Institution for technical training on to the second grade hospital for disabled men installed in the Villa Bondi.

And finally, we have the second-grade hospitals that are installed in the Royal Palace and in the Palace of San Vito, both of Turin, where, besides the elementary instruction, workshops have been opened for the manufacture of willow-work, basket-making, toys, bead work, and there is a school for drawing and engraving.

The advantages shown by the preparatory technical training, as it is practised in the second grade hospitals, are generally acknowledged by us all at the present day—indeed, the Disabled Men's Act has sanctioned them legally. It would be too long a task to enumerate, in detail, all the different articles that are manufactured by our disabled men—toys, shoes, bead work, book-binding, cabinet making, surgical appliances, &c.

It is hoped that this kind of preparation may extend its influence to bringing back to the land the agricultural labourers, so numerous in our country, by showing them the practical possibility that exists in many cases of their being enabled to resume the work of which they were experts before becoming disabled.

II.

But that which stands out the most in all the work accomplished by Italian Local Committees for the Assistance of Disabled Soldiers and Sailors, is what has been done with regard to technical training by the promotion of the institutions and schools for training for the disabled men.

To this end the Italian people have most fully contributed with money and in many other ways. In view, however, of the enormous expenditure entailed by the adequate development of the institutions that have been called into existence by the awful demands made because of the war, the Government have granted the committees a subsidy for every disabled man kept in the various training institutions, amounting to It. lire 3.50 per diem for the indoor patients, and It. lire 2 per diem for the outdoor patients, for a stated period of not more than six months. In many cases, however, this period of time is much too short for a complete training, and, under those circumstances, the Italian Local Committees themselves defray the extra expense out of

their pockets, for as long as the disabled man is obliged to remain in the institution. For instance, in the Turin schools the average stay is of about one year. The committees generally allow a small daily amount of pocket money to their pupils—about It. lire 1 per diem; part of this amount is put into a savings bank, and is handed to the disabled man when he finally leaves the institution.

As a rule, better results are obtained from indoor pupils, but outdoor pupils are also accepted.

The working hours range from seven to eight a day. The pupils are allowed to go out three times a week at the most. On completion of the training, the disabled man is put through an examination, and if this is successfully passed he obtains a certificate. As regards elementary instruction, the examinations are given by a Commission especially appointed by the Educational Authorities, and therefore they receive legal sanction.

The number of pupils in the ideal training school ought to be large. Without mentioning the many obvious reasons which would bear out this statement, it is plain that in small institutions there cannot be taught a sufficient number of trades to satisfy the bent or the physical powers of each individual disabled man.

In Italy we have several technical training schools which very nearly fulfil this last requirement, as, for instance, those in Lombardy, Sicily, Rome, Emilia, Piedmont, &c. In these provinces and districts all previous local organisations have been centralised into one big institution, thus obtaining most remarkable results. This, however, has not been possible everywhere, for in many places of no great importance the people have been induced, by a strong feeling of patriotism, to make it a point of honour, and as a token of their devotion to our country and to our soldiers, of founding and keeping up an institution of their very own, where, naturally, only a limited number of disabled men can be admitted, and a few trades taught.

Even so, a sort of advantage is gained, for the disabled men are only too glad to be near their own people and friends, whilst the latter have better opportunities for taking an active interest in the men, and in giving them assistance when their training is completed. Later on the grouping together of the smaller institutions belonging to certain provinces was happily accomplished, thus adding the possibility of the development of a better system of training.

In the Venetian Province we have a good instance of this method of grouping the institutions together. The Union of the Venetian Committees has gathered into one single confederacy the several efforts that had been made by the cities of Venice, Verona, Vicenza, Padova, Udine, Treviso, Rovigo, and Belluno. Unhappily, the events of the war came to spoil the work that had been so well started. The Venetians, however, have not lost heart. Their troubles have linked them more closely

together, and, with the aid of our Government, of the League of Italian Committees for Disabled Soldiers and Sailors, and with the backing of the entire nation, they have removed the once flourishing institutions of Venice, Padova, Verona and Udine to Florence. And there, as the proclamation made by the Union of the Venetian Committees has it, in the City of Flowers, these training schools, although so far away from their places of origin—yet ever in spiritual communion with their native towns—will continue to spread their beneficent influence, fraught with so deep a meaning in these troublous times, until the coming of that long hoped-for day when the unredeemed portions of Italian soil will at last be delivered from the yoke of the enemy.

Our disabled men generally find in these institutions the training as well as the workshops they require. Several of these institutions have also availed themselves of the facilities that already existed in the Technical Schools belonging to the districts. Again, the disabled men can go through a course of training at the workshops that have been set up by philanthropic manufacturers for this purpose.

The trades that are generally taught in our Training Centres are: Shoemaking, tailoring, saddlery, carpentering, general mechanics, cabinet making, book binding, manufacture of wooden clogs, &c.; furthermore, all trades indigenous to agricultural districts, as, for instance, basket making, cartwright and cooper trades, &c. In addition to these there is the commercial training, which comprises book-keeping, typewriting, drawing, telegraphy, &c. All disabled men who are learning a manual trade are also compelled to attend the public school classes during one or two hours daily.

As it has happened in other countries, the selection of trades that has been made for the disabled men in Italy has not always been a wise one; the result of much experience, however, has allowed us to lay down the following rules:—

- (1) Whenever it is possible, the disabled men ought to be retained in the trade followed by them in pre-war days, or in one similar to it;
- (2) The above rule ought to be applied especially to agricultural labourers, who constitute in Italy about 85 per cent. of the total number of disabled men.

Through the efforts that have lately been made by the League of the Assistance Committees, and by individual committees as well, labourers have been induced to return to the land, disabled men having become convinced of the advantages accruing to them and their families by so doing. This is a step, however, to be taken only after the disabled men have learnt the use of labour appliances suitable to each particular case, and on their completing a course wherein they have been taught the rudiments of modern agriculture; in this way, and in spite of their physical disability, they may obtain from the land a much better yield

than they would have done had they persisted in following the ancient methods.

(3) In view of the very large number of disabled men who aim at obtaining small Government appointments, the necessity has been recognised of discountenancing their applications, and by so doing, sparing them many future disappointments; it has been also recognised that it is infinitely preferable to give the disabled men a thorough training in appropriate trades and callings, which, besides being of a more profitable and independent nature, are also not quite so much sought after.

(4) The authorities have also come to realise the necessity of discouraging the tendency which has increased to big proportions, of crowding into the cities. This has been obtained by persuading the disabled men to return to their native towns or villages as much as possible.

We will now make a brief sketch of the Training Institutions for Disabled Soldiers and Sailors to be found in Italy, and that are at present under the direct authority of the National Institution for Disabled Soldiers and Sailors.

Starting in the farthest southern district of the kingdom, in Sicily there is the Disabled and War Blinded Soldiers and Sailors Committee, established in Palermo, which is deservedly considered to be one of the best amongst the other most excellent Sicilian Institutions for Disabled Soldiers and Sailors that were called into existence by the committee.

This institution was installed in the Villa Belmonte, and opened in November, 1915. It then had accommodation for 100 patients, but it has been greatly enlarged since then by the purchase of an important estate at San Lorenzo ai Colli, whereon buildings are being erected, forming an annexe for the original establishment. The institutions and its dependencies can accommodate 370 patients at the present date, and when all the buildings are completed there will be room for 450. From the date of opening up to the end of last March, 1,282 disabled men had received the hospitality of this institution.

The Villa Belmonte, in which there are 170 beds, is used as a Preparation Ward. It is there that all the disabled men coming from the different hospitals in Sicily are collected, and after being provided with temporary or final appliances they are carefully nursed, in accordance to the requirements of each case, and go through the first stages of their technical training. Here are to be found schools and small workshops for shoe-making, basket-making, pottery, &c.

Thence the disabled men are sent on to the Labour Ward, where there are regular class-rooms, big workshops for the manufacture of surgical appliances, and a department for agricultural

technical training. Whilst in San Lorenzo, besides the technical training, the disabled men receive a therapeutic treatment which is enormously beneficial to them.

In this institution there are special courses for house painting, cabinet makers, engravers, decoration of pottery, &c., besides the usual classes and courses found in other training centres.

The disabled men are paid so much per hour in proportion to the work they do. A few of them have obtained admission, for training, to workshops of the City of Palermo proper, where they go through a regular course of instruction.

A considerable amount of importance has been acquired by the factory of San Lorenzo, where farming is taught in all its various branches: the making of butter and cheese, the care of fowls, the breeding of pigs and rabbits. Stables have been installed there, as well as beehives, and there are workshops for the repairing and fitting of agricultural implements.

This farming branch, which is very cleverly managed, has already given remarkably good results, in spite of its having been initiated only a few months ago. Among the disabled men who have been received by this institution, there are quite a number of farm labourers. In the course of ten months this branch has had 125 pupils, of which 69 have been trained; there are, at present, 28 remaining, as the other 29 have, for various reasons, not persisted with the course.

Taken all in all, the Sicilian Committee has done really admirable work.

Further north of the peninsula we have, at Lecce, a School for Farming which accommodates 45 men, and was installed in the beautiful Villa Sans-Souci by the Provincial Committee for Disabled Soldiers and Sailors. Having been opened as late as last October, we cannot, for the present, emit any opinion as to the results it may give.

In Naples there is a very good training centre that has been installed in the Hotel Haessler by the Neapolitan Committee for disabled men; it now has accommodation for 140 men, but will shortly be enlarged in order to hold 250. Besides the public school classes, there is a course for drawing and typing, and several workshops as well. There is also an orthopedical establishment, which can turn out about 100 artificial limbs per month. In order to start a course of farming, a special branch has been opened at Bellavista on an estate adjoining the Portici Agricultural High School. This school will co-operate with the Committee in this department.

In Rome the Roman Institution for the Assistance to the Blind and Disabled Soldiers and Sailors has been installed at the Villa Mirafiore, placed at the disposal of the Authorities by the members of the American Academy. This institution was opened in May, 1916, and can accommodate 200 men; besides its many classes and laboratories, it has several wards for

therapeutic treatment. The large workshop for the manufacture of artificial limbs that was fitted up by the British Red Cross and presented to Her Majesty the Queen of Italy, also belongs to this institution although it is actually situated in the Quirinal Gardens. A large allotment adjoining the grounds of the Villa Mirafiore is entirely cultivated by the disabled men. These same men have been authorised to attend a course for improvement at the Perugia School for Farming, where the Committee for the Assistance of Technical Training for Disabled Soldiers and Sailors have, dating from September, 1917, instituted 38 scholarships to be given to the men from the Roman Centre. The disabled labourers belonging to the army corps of Bologna are equally admitted to this course.

The Marchigiano Committee for the Assistance to Disabled Men of Ancona has established a farmers' colony at Porto Recanati, where 30 men are admitted. Here, there are special sections for the training connected with farming; and, in the Villa Almagia, in Ancona, this same Committee has instituted courses for both technical and commercial training. These, as well as many others that are connected with the sanatorium for nervous patients in Ancona, and a workshop for the manufacture of surgical appliances, have barely been started; they are giving every indication of proving most successful.

In Tuscany there are training centres for disabled soldiers and sailors not only in Florence, but in Leghorn, Pescia, Pisa, &c.

We have already mentioned the excellent results obtained by the Florentine Committee for the Assistance to Disabled Men, through their introduction to technical training in the second grade hospital installed at the Villa Bondi, where there is accommodation for 110 residents. Besides this, there is the School for Farming, which constitutes a branch of the Villa Bondi Professional Training School, and that has been working ever since December, 1917. The teaching there is both theoretical and practical, having special reference to farming methods in Tuscany. The disabled men can attend daily courses on the subjects of gardening, apple growing, grafting, clipping, beehives, &c. From the date of its initiation up to the present day, 50 disabled men have attended the lectures at the School for Farming.

In January, 1917, a Training Centre was started by care of this same Florentine Committee in Via Ponte alle Mosse; it has accommodation for 70 men, and is beautifully fitted up with first class laboratories and classes, and is under good management.

As has already been said, the League of Venetian Committees has caused to be installed in Florence all the training centres which were previously working in Venice, Verona, Padova, &c. The Venetian Provincial Committee used to have in Venice an excellent organisation which was established in the British Hospital, with accommodation for 110 men, and with classes and workshops that already had given very good results. In Padova the Padova Provincial Committee had established a farming

colony capable of accommodating 150 men in the Villa Wollenborg, and there used to be another very good training centre in Verona. And yet another was just going to be opened in Udine, whilst the several committees of Belluno, Rovigo, Treviso, and Vincenza were uniting their activities to those coming from different other districts in the Venetian Province with a view to assisting the disabled soldiers and sailors. The Austro-German invasion checked but did not stop this work, and it is now being resumed in Florence with renewed enthusiasm and earnestness.

In Pescia the Italian Red Cross has established a Training Centre in the Villa Calderai, with accommodation for 127 men, who can be trained in farm work by following the courses at the neighbouring Royal School for Farming. This institution aims at a closer co-operation between the Medical Board and the Royal School Board, in order to obtain perfect harmony as regards treatment and functional recovery and professional training.

Ever since January, 1917, the training centre at San Zeno, Pisa, has been in working order; it can take in 35 men, and is managed by the Committee for the Assistance, in Pisa, of Disabled Soldiers and Sailors. Another one is established in the Villa Corradini, Leghorn, having accommodation for 50 inmates, and managed by the Leghorn Association for Disabled Soldiers and Sailors.

Ever since the month of May, 1916, the Italian Red Cross, with assistance received from other sources, had established the G. Romiti Institute in Spezia; this institute takes in 130 disabled men and provides courses for the elementary training in telegraphy, workshops of various kinds, and allotments for experimental gardening for flowers and kitchen produce.

In Modena the Provincial Committee for Disabled Men has, since April, 1917, established the Autonomous Provincial Institute for Cripples. Connected with this, there are public school and manual labour classes; especial attention is paid to the farming section.

In Bologna there is a training centre that deserves the highest praise; it was created by the Institution of Assistance to Disabled and Crippled Soldiers. It was in Bologna that the first hospital concentrating station was established, making it obligatory that all disabled men belonging to the local army corps should make a short stay at the training centre, with a view to their getting acquainted with the advantages of the system.

The Bologna Training Centre has grown both in size and in importance and, to-day, can accommodate 150 pupils. The encouragement given to physical activities, such as marching, calisthenics, bicycle riding, &c., calls for special notice; this is done with a view to the pupils attaining the highest physical efficiency consistent with disablement. Another good

feature of this institution is the great attention that is paid to the cultivation of the men's minds; to do this, they are taken to visit factories, museums, art galleries, and the many interesting monuments that abound in the Province of Emilia.

In Genoa the Ligurian Local Committee has paid special attention to the surgical treatment with reference to the general training. The technical training centre in the Villa Raggio was opened in January, 1917, accommodates 73 men, and has several small workshops for the different trades; these are being enlarged.

The Lombard Committee has created in Milan a complex establishment for the assistance to disabled men which is most worthy of the great Lombard metropolis. The surgical treatment is in the care of the Pious Rickets Institution, whilst the Lombard Committee give their more special attention to technical training and general assistance. This training centre contains, at present, three branches, viz., workshops, courses for commercial training (clerks, &c.), section for farming.

The workshops branch is established in the Lady Finzi Ottolenghi Shelter at Gorla, where, besides the living apartments and general offices, there are the educational laboratories for training, the wards, and, in appropriate huts, there are the classes where the various professional courses are followed. The pupils now in residence number 200; those that have been dismissed after completion of training, 350.

The branch for commercial training (clerks, &c.) which was formerly in the Marcelline Institute in Milan, has now been removed also to Gorla, to the Gazzaniga huts. This course consists of the preparatory class, the clerkship class and the improvement class; there is also an art school (for training drawing masters, indoor house painters, architect helpers, &c.). There are now 150 pupils there, whilst 300 have been dismissed after completion of training.

The farming branch is situated in the Villa Pelitti, not far from the town of Precotto; it has only recently been started, and can take in about 100 men. The auxiliary trades in relation to farming are also included in the courses at this branch, such as wicker work, manufacture of clogs, &c. There are also workshops for blacksmiths' and carpenters' training, hothouses, stables, beehives, fruit gardens, experimental allotments for farming, &c. In every section the teaching is both theoretical and practical; the men each receive a small daily allowance for pocket money proportionate to their time of residence and proficiency in the course of learning.

The Piedmontese Provincial Committee have their headquarters in Turin; the different branches of their activities are spread all over the Province of Piedmont. The chief training centre is in Via Rossini, Turin; quite small at first, it has since grown to generous proportions. It can now receive 190 pupils, and

when the new buildings which are going up are completed, that number can be increased to 300. It will then have very complete workshops, with every convenience, class rooms, and laboratories where surgical instruments will be manufactured for supplying the entire province. There is a handcraft's section and a section for commercial training for clerkships, &c. Just outside the city of Turin there is an annexe of the training centre, the Institution for Farming, of Bonafous, where disabled men are trained in farm work. This institution can take in up to 30 men, and the teaching is both theoretical and practical.

Finally, in Casale, through the initiative of the Alexandria Sub-Committee, supported by the Piedmontese Committee, a small training centre has been started; it is hoped that it will soon develop into a School for Farming suited to the importance of this agricultural district.

Taken as a whole, the training centres now existing in Italy can accommodate up to 2,800 disabled soldiers and sailors. Thanks to the activities of the National Institution for Disabled Soldiers and Sailors, it is expected that many more of these institutions will be created in a very short time.

III.

We will now say a few words as to the after care that follows the technical training, and that devotes itself to sustaining and helping the disabled men on their returning to the life of civilians. This question is most important, and is closely connected with technical training, inasmuch that, without the after-care, all the advantages of the training would be lost.

On leaving the training school, the disabled man nearly always has a small capital with which to get the necessities of life; this is the result of those entries made during his training into the savings bank book by his Committee, and represent part of his earnings during the said training. To this amount have been added, from time to time, the rewards for training given by the Minister of the Interior or by the Committees themselves. The disabled man is also generally presented with the surgical appliances he may need, with tools or books required for his new trade.

As a rule our disabled men find work to do with comparative ease on leaving the training centres, and nearly always obtain a much higher wage than they earned in peace time.

Each Local Committee takes a special pride and interest in finding work for the discharged disabled men to do, and many have created Special Labour Exchanges. Nor are the men either forgotten or neglected once they have found work to do, each training centre taking special care and pride in watching over their old pupils, especially at the start. This is a subject on which Signor Avv. Martello will make his report with all the earnestness called for by so weighty a problem.

So we will set this point aside and treat more particularly of the after care of disabled men on the completion of their training. In this respect it would be well to mention the activities of the Sicilian Institute for disabled men with regard to the after care of their old pupils who have obtained positions in the factories in Palermo. We refer to the Disabled Soldier's Home, which has proved a real boon to disabled men who, after leaving the training centre, have often found great difficulty in obtaining board and lodging. To this end the Sicilian Institute has rented suitable apartments, furnishing them and fitting them up for the occasion, and lets them out to their former pupils for a nominal rent. All the management of this Home is entirely left to its inmates with regard to catering and all other details. This undertaking, if well managed, ought to give the best of results and should soon find imitators.

We thus have given a cursory glance to what has been accomplished in Italy with regard to technical training of disabled soldiers and sailors; the work that has been done has been well done, and was chiefly taken up spontaneously by the Local Committees. It will now be the task of the National Institution for State's Work to continue the task so well begun, to carry on this great humanitarian work in the same spirit in which it was begun.

The wisdom and knowledge of the world which is characteristic of the eminent men who have been appointed to preside over and manage the Institution, assure us that the Italian legislation will be applied in such a way as to secure full efficiency for the Government's action. Thus, with a wisdom and knowledge worthy of our ancient Roman fathers, shall we fulfil our pledge of gratitude towards our brave and beloved disabled soldiers and sailors.

TECHNICAL RE-EDUCATION IN ITALY, IN ITS RELATION TO THE LAW FOR THE ASSIST- ANCE AND PROTECTION OF THE DIS- ABLED.

By PROF. ETTORE LEVI, Member of the Executive Committee of the National Commission for the Assistance, &c. (Florence, Italy).

The purpose of the present report is to present a succinct account of the Law for the Protection and Assistance of Men Disabled in the War, adopted by the Italian Parliament in March, 1917. For upon this law is based not only the organisation of Technical Re-education in Italy, but also the whole complex work of the after-care and social assistance of every disabled man, whether he be incapacitated by wounds or through illness.

The execution of this great undertaking has been entrusted by Parliament to a new organisation, known as the National Commission for the Protection and Assistance of the Disabled, composed of Members of Parliament, administrators, specialists, and disabled soldiers themselves, presided over by Prof. Durante, Senator of the Realm.

The mission of the National Commission has been greatly facilitated by the work accomplished during the first two years of war, by municipal and regional committees, whose activities have been, since October, 1916, co-ordinated and directed by a Special Inspector, Prof. Enrico Burci, of Florence, attached to the Ministry of War, and appointed by the Prime Minister at that time, Sig. Boselli.

The essential duties of the Special Inspector have been the re-organisation of the Military Institutes for the Reception of Disabled Men, and their co-ordination with those already established by the civil authorities. Only by such re-organisation and co-ordination could the uniform and continuous treatment, both material and moral, of the disabled be secured.

The Representative of the Minister of War will describe, in another report, the details of the immense and beneficent organisation—medical, military and civil—by the achievements of which the National Commission has been enabled, since its inauguration, to profit for the special ends of Technical Re-education. It must be alluded to here only from a general and schematic point of view, but a more adequate report will be presented by Sig. Chevalley.

The amalgamation of the existing civil and military organisations has been brought about of necessity, by the experience of the

first year of war. For this experience indubitably showed us that re-education, as a general measure, was doomed to failure, if it were not preceded by an adequate moral and physical preparation of the disabled man from the initial stages of his incapacity, and followed by a wise and kindly supervision during the critical period of his return to normal surroundings. Ideally, this pre-education—that is to say, the moral preparation of the patient—should be initiated at the very moment when he first realises that he will remain hampered for life by his physical disabilities.

In order to realise such an idea, we have attempted in Italy to concentrate without delay all the seriously disabled in two surgical First Receiving Centres, where they may live in an atmosphere favourable to their preparation for an active future. For this reason every patient, from whatever sector of our extended front he may come, is immediately conveyed to Mantua for the Northern front, and Bari for the Eastern front, where he is ensured not only the most efficient medical and surgical treatment, but also the most intelligent and loving moral preparation.

In order that such preparation, so obviously of the first importance, should be carried out in the most ideal way from the very start—in the small field hospitals and in the hospital trains—the National Commission has undertaken the publication and the distribution of a pamphlet of propaganda. This pamphlet, published in the simplest form, is designed to popularise the law relating to the disabled, explaining to the patient and to all who may attend him—doctors, nurses, chaplains, &c.—what are the rights to which he is entitled, and all that these imply; medical and surgical attendance; free provision of artificial limbs; maintenance for six months in a School of Re-education; the laws relating to pensions and legal medical attendance; social relief and the securing of employment for discharged disabled men in public and private businesses. The pamphlet, abundantly illustrated, and distributed by the thousand throughout the whole country, by means of the civil authorities, doctors, parish priests, &c., will also serve the purpose of explaining these advantages to many discharged disabled soldiers who, during the first period of insufficient organisation, did not profit by rights and privileges which had not been made adequately clear to them.

From the first receiving hospitals in Mantua and Bari, the patients will be distributed, according to locality, among the first concentration hospitals of Turin, Milan, Genoa, Bologna, Florence, Rome and Naples, thus being brought without delay into the neighbourhood of their families and of their normal environment. In these hospitals, chosen for their healthy and agreeable surroundings, the surgical treatment of the patient is completed, and, simultaneously, the moral preparation, already initiated, is carried out by the personnel of the local School of Re-education. As soon as the patient is able to sit up in bed, he is encouraged to attempt light occupations—bead-work, cardboard-work, toy-making, &c. Thus his passive mentality is transformed into an active mentality, and he begins

to feel the hope of a renewed possibility of work and to appreciate its necessity.

The wounds of the patient being nearly healed, he passes to the local concentration hospital of the second grade, where his physical and orthopædic treatment is completed. The stumps of the mutilated limbs are then put into a condition favourable for the adaptation of artificial members, and crippled limbs are restored as far as possible to their functions. In this period the patient is no longer confined to bed, and his general re-education may be extended; he is accordingly encouraged to attend the schools which exist throughout these districts. In such schools illiterates, unfortunately numerous in Italy, are taught to read and to write; or, having already mastered the rudiments of education, they may bring their knowledge to some degree of perfection. The patients have also at their disposal small workshops, intended, for the most part, for the light manual work suitable to the great mass of our disabled, who come from agricultural districts: the auxiliary trades of agriculture, such as wicker-work and basketry, coopering, clog-making, &c. By these means, even those patients who persistently refuse to spend six months in the Schools of Re-education are enabled to return to their homes with some notion of the best way to exercise their normal occupations. During this period the patients are furnished with temporary artificial limbs.

Then follows the third and last period of treatment. The physical treatment of the patient completed, after a month's leave he passes on to the School of Re-education already existing in each one of the above-mentioned cities.

Re-education is, unfortunately, not compulsory in Italy; but the law has been framed with such foresight as to affect the greater number of those who have need of it, making compulsory for every indigent patient a sojourn of at least fifteen days in the Schools of Re-education. He is, accordingly, made to realise the possibilities open to him, and does not risk refusing such benefits owing to an incomplete appreciation of them. The return of those who may repent of their former refusal is thus made easy.

Only in the School of Re-Education itself do the disabled receive their permanent artificial limbs. These are supplied by the special laboratory attached to each school under the direction of an orthopædic surgeon. Many schools also furnish gratuitously the necessary implements for the exercise of the trades and handicrafts taught there. This system has the object of centralising and retaining every patient for the longest possible time in the Schools of Re-education.

These schools were established in Italy through local initiative, and for this reason neither their administration nor their programmes have been perfected or co-ordinated. They are now, however, under the control of the National Commission, which

will reinforce and organise them according to a general and uniform design, as follows :—

1. The great mass of disabled agricultural workers will be given some elementary scholastic knowledge (the campaign against illiteracy).
2. They will be taught at least one of the easier trades which may be followed in any part of the country, and are known therefore as subsidiary to agriculture.
3. The more informed and intelligent agricultural labourer will receive instead a general and technical instruction which shall advance him according to his former occupation, teaching him the more highly specialised methods of agriculture and of stock-breeding. Such a programme will tend to check the artificial movement toward the cities and the pernicious pursuit of Government employment. The first School of Agriculture at Palermo has already shown admirable results in this regard, and other Re-education Centres are accordingly directing their steps to follow upon the same road.
4. Disabled men who prefer non-agricultural work will find in the same centres of re-education both primary and secondary schools and workshops where they may be trained in the trade most adapted to their condition, with special reference to local industries. Upon this point more ample details will be given in the report of Sig. Chevalley.

We in Italy are convinced that the resident system is greatly superior to the non-resident, and we have, therefore, put the former into more extensive practice, yet without such rigid enforcement as to prevent men availing themselves of every practical local training scheme carried out upon a different basis. We are equally convinced that the larger institutions present material advantages over the smaller. Up to the present time, however, the smaller institutions have perforce been more prevalent with us, since, during the early days of private initiative in Italy, the local bodies, though zealous, were little controlled and lacking in means. The National Commission, now reviewing the entire situation with impartial judgment, intends to give the maximum of assistance to the more flourishing institutions, and inexorably to condemn the weaker and less successful. The work of supervision and control is carried out by continuous inspections, entrusted to committees chosen from among the members of the National Commission, and composed for the most part of a specialist in re-education, an administrator and a disabled officer or soldier.

In this regard it is worthy of note that there exists in Italy a flourishing Association of Disabled Soldiers, numbering already some 20,000 members, and acting in strict accord with the military authorities and with the National Commission. Representatives of this society are members of the Council of the National

Commission and of every local committee. They have also the right to control the methods of re-education prevailing in the various centres.

The National Commission exercises its complex work of control through the medium of the local committees, which, during the first period of the war, spontaneously undertook the establishment of schools of re-education. The local distribution of these institutions is, however, unfortunate, being numerous in the north and scarce in the south. To obviate this grave inconvenience, the National Commission is undertaking, at its own expense, to found a large institution at Bari, and another in Sardinia, and is intending also greatly to extend the already existing institution at Naples. But in thirty-three provinces of Italy there exist at present no Schools of Re-education, and it is not desirable that they should exist; for, as we have said, the aim of the National Commission tends rather toward the perfecting of the larger local institutions. It is to be desired, however, that in these provinces the disabled who have rejected their first opportunity for re-education should, if possible, be drawn back under its influence, and by every other means be helped and protected.

To this end the National Commission has created, in the chief towns of these thirty-three provinces, official committees, composed in each case of seven members, one of whom is himself disabled. These committees exercise in the outlying districts the fundamental functions of the National Commission, and have also the duty of choosing the communal delegates, who may be likened to the capillary vessels of an arterial system, extending their beneficent propaganda to every remote and obscure part of the country. In this work of propaganda, in the remoter districts, the delegates of the Society of Disabled Soldiers are invaluable coadjutors.

The National Commission is actively engaged in the preparation of a new and complete census of the disabled men who have already returned to their homes. The Commission will thus be enabled to supply, with the least possible delay, what has been lacking in the past. For only by means of an exact report of the physical, re-educative and social circumstances of each individual is it possible to bring under fresh supervision those disabled men whose condition is still capable of improvement, to complete and perfect the application of artificial limbs, to attract to the Schools of Re-education those who have not already profited by them, and to secure employment for those who have or have not been re-educated.

The Commission is also organising a Special Committee for the Study of Prothesis, endowed with ample powers and an extended programme. This committee will study, both from a practical and scientific standpoint, the subject of artificial limbs in general, and of those adapted for industrial purposes in particular.

Our experience justified us in the course we have followed, since, in the well-directed institutions, there are but few patients who refuse re-education. Unhappily, the contrary is sometimes the case. The percentage of those who reject re-education in imperfectly organised institutions, where the beneficent influence of example is lacking, has always been, and will always be, high. At present the percentage of disabled men who have been trained is steadily rising, while the re-education of the crippled is not yet sufficiently extended, with the result that many of the latter become indifferent to every advantageous influence. But in every concentration hospital for cripples, and in the neurological centres, there exist both elementary schools and small laboratories to give an initial stimulus towards work. The National Commission expects shortly to establish for the cripples the same scheme of systematic re-education already secured for the disabled.

For the treatment and re-education of the blind, the same general scheme will serve. From Mantua and Bari they are rapidly centralised in the ophthalmic first concentration hospitals of Milan, Rome, Florence, Naples and Catania, where, along with the necessary physical treatment, they receive the first moral preparation. Systematic re-education is carried on in the excellent Schools of Re-education in these same cities, which will be described in the report of Signor Mondolfo. The same general plan is followed for the permanently deaf-mute, who will be taught lip-reading in special institutes.

The disabled of every grade receive free maintenance in the Schools of Re-education for a period of six months, which may be extended in the case of those who show themselves deserving.

The financial requirements of the National Commission are determined year by year by the Ministry of the Interior, acting in collaboration with the Council of the National Commission. The finances of the Schools of Re-education, previously supported by private funds, will be taken over by the Commission, as is necessary or desirable. The Commission undertakes also to administer gifts or legacies made to the disabled.

Lastly, the National Commission has also the task of extending its protection and assistance to all Service men incapacitated through illness. This is a work of immense proportions and of essentially medical character, which, however, must not be separated from re-education. For no patient, until he be restored to favourable physical condition, is capable either of re-education or of social usefulness. Special study is being given by the Commission to the grave problem of the tubercular cases, with the close co-operation of the military and civil sanitary authorities. It is intended that tubercular patients shall be taught, in special tuberculosis sanatoria, that *régime* of life which they must follow if they hope to be cured. While actively forwarding such anti-tubercular pre-education, the Commission expects to have among such patients a steadily increasing percentage who may become candidates for a future technical re-education, under

a special supervision which must never lose sight of the pathological origin of their disability.

The financial and industrial future of all disabled men in Italy is facilitated by the fact that the foresight of the law has undertaken to insure them against industrial accidents, and will also advance to them, with the guarantee of their pensions, sufficient loans to make possible the building of farm-houses or the purchase of cultivable lands. The concession of such benefits is under the strict control of the National Commission, which will, however, give it the widest possible application, so that in time a large proportion of our disabled agricultural workers will become proprietors of small farms which they may cultivate by their own labour.

I have tried to review in a few words the scheme according to which, by virtue of the Italian Law, the National Commission is applying itself to the re-education, moral and physical, of our disabled men. But the Commission, not content with what has already been accomplished, aims at achieving an increasing efficiency, guided by the teaching of ever-changing experience. For this reason, the Commission has already initiated studies for the revision of the present law, which, though excellent in many points, has already shown certain deficiencies, notably in regard to the assistance of the ultra-disabled* and of those incapacitated by illness. The Statutes which establish the duties and claims of the disabled must also be revised, according to the desires of the disabled themselves.

With such a profound consciousness of her duties; with an inexhaustible will towards good; with a serene faith in what is to come, Italy has provided, and will provide, that the future of her noble sons is, and shall always be, worthy of their glorious past.

* NOTE.—See the report to the Inter-Allied Conference of the same author on the subject of the Assistance of the Ultra-Disabled (for example, blind, with double amputation of superior limbs, &c.).

Those who may desire fuller information upon these subjects treated in the foregoing report may refer either personally to—

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or to—

OPERA NAZIONALE PER LA PROTEZIONE ED ASSISTENZA DEGLI
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VOCATIONAL TRAINING AND VOCATIONAL RE-EDUCATION IN CANADA.

By Major R. T. MacKEEN.

Vocational training of the returned invalided Canadian soldiers was first begun in a small way, early in 1916, in various convalescent homes and hospitals throughout the country. The results were so satisfactory that arrangements were perfected for an extension of the work to all our hospitals, and serious consideration was given to the problem of vocational re-education and the importance of rehabilitating invalided men generally to take up again the responsibilities of civilian life and industrial activity.

All invalided men when returned to Canada are under the control of the Militia Department. Those requiring further treatment are maintained in convalescent military hospitals until such time as all that can be medically done for them is accomplished. During the time that they are in these military hospitals, the men have the opportunity of engaging in bedside occupational work or in taking up the more serious undertaking of vocational training. A special staff of vocational officers attached to the invalided soldiers' Commission co-operate with the Military Hospital Authorities in the performance of these duties.

As soon as all that can be done medically for a convalescent man is accomplished the man is discharged from the Service. He is granted a pension, when justified, and is automatically transferred to the Department of Soldiers' Civil Re-establishment. The functions and powers of this Department are briefly as follows:—

- (a) The providing of hospitals, convalescent homes and sanatoria, whether permanent or temporary, for the care or treatment of invalid officers, non-commissioned officers, men or other members of the Canadian Expeditionary Force who have been honourably discharged therefrom, and the administration, control and erection of all such hospitals, convalescent homes and sanatoria.
- (b) The vocational, educational and other requisite training for civil occupation of all persons who have served in and who have been honourably discharged from the Canadian Expeditionary Force.
- (c) The provision of employment and all such assistance therein as may be requisite or available for the persons aforesaid and generally for their rehabilitation in civil life and activities.

- (d) All matters relating to pensions for the persons aforesaid, in co-operation with the Board of Pensions Commissions.

The Department of Soldiers' Civil Re-establishment is presided over by a Minister who is assisted by a Parliamentary Secretary and a Deputy Minister.

There is a Sub-Department which devotes itself particularly to vocational training and vocational re-education. This is known as the Invalided Soldiers' Commission. This Commission is presided over by a Director assisted by an Officer i/c Discipline, an Officer i/c Medical Service and a Vocational Administrator. The personnel of the Vocational Branch in order of their responsibility is as follows:—

Vocational Administrator.
 Vocational Secretary.
 Provincial Vocational Officers.
 District Vocational Officers.
 Principals of Vocational and Re-educational Classes.
 Instructors.

The first two-mentioned officials make their Headquarters at Ottawa and are responsible for the general administration of vocational work throughout the country. Each Provincial Vocational Officer has complete control in his respective Province and District Vocational Officers are allocated to each centre in the Province where the hospitals are located and training work is carried on. In each Province, for the assistance of the Vocational Officer, there is established a Provincial Advisory Committee on Training, the functions of which are briefly as follows:—

- (a) To prepare, with the assistance of the Vocational Officer, schemes of instruction in general subjects and elementary vocational training in, or in connection with, the convalescent homes or hospitals of the Province. These schemes are submitted for the approval of the Invalided Soldiers' Commission, which may then sanction the expenditure involved in any scheme, or suggest modifications, or otherwise, of the scheme.
- (b) To organise and carry out such schemes as may be approved by the Invalided Soldiers' Commission.
- (c) To maintain a regular inspection, preferably through the Vocational Officer, of all instruction being carried on under schemes approved by the Invalided Soldiers' Commission.
- (d) To make a survey of the facilities at present, and from time to time, available for vocational training in:—
 - (1) Public educational institutions.
 - (2) Private educational institutions.
 - (3) Private workshops, farms, &c.
- (e) To assist the Employment Commission by providing definite information as to the training received by men who desire assistance in obtaining employment.

- (f) To appoint or approve local Sub-Committees on training in connection with local employment Committees in centres where it may appear to be necessary to have such a committee.
- (g) Generally, to advise and assist in the training of returned soldiers in every possible way.

The duties of a District Vocational Officer are briefly as follows:—

- (a) To act in co-operation with the Advisory Committee on Training, of the Province.
- (b) To make personal surveys, when necessary, of all cases where the man indicates his desire to be helped to obtain employment and to transmit suggestions on each case to the Provincial Employment Committee or its local Sub-Committee.
- (c) To act as a member of the local “Disabled Soldiers’ Training Board” and to transmit its recommendations to the Invalided Soldiers’ Commission.
- (d) To arrange, through the Advisory Committee on Training, or otherwise, for the placing in educational institutions, private workshops, farms, &c. of all men who have been passed for training by the Commission, and to maintain a regular inspection of all such men and report upon each case at stated intervals to the Commission.
- (e) To arrange for regular or occasional meetings of the local Disabled Soldiers’ Training Board, as the circumstances may require.
- (f) Such other duties as may be assigned him by the Commission from time to time.

Each District Vocational Officer is further assisted in his work by a Disabled Soldiers’ Training Board consisting of:—

- (a) A member of the Provincial Committee.
- (b) A District Vocational Officer.
- (c) A specially selected medical officer.

The duties of the Board are as follows:—

- (a) To consider all cases which, in the light of the medical reports, appear to be subjects for special training and to report upon each, with suitable recommendations, to the Invalided Soldiers’ Commission.
- (b) To consider, from time to time, reports of the progress of men undergoing training and to make recommendations as to change of treatment, or of training or its discontinuance.

In addition to this in large centres where re-educational work is carried on there exists a Technical Advisory Committee which consists of the best men available in their respective industrial professions or occupations. These men make it their special

work to counsel and advise the principals of the schools and the instructors in the performance of their duties. The purpose of this is to provide the very best intensive instruction in the particular professions or occupations represented by the members of the Committee.

Bedside occupational work is carried on in the Military Convalescent Hospitals with the co-operation of the medical officers in those institutions with a view to engaging the men's minds as far as possible in practical, instructive and interesting occupations. They are thus enabled to fill in many hours of usefulness, which would otherwise be spent in unprofitable pursuits, or in brooding over their condition. This work has the further advantage in many cases, of compelling corrective physical effort for the hands or feet or limbs, which would not be available were it not for the interest which the work inspires in the men. It has also been found possible to introduce in this work, subjects which frequently direct the men into useful professions and occupations which they will follow up during their convalescent vocational training and ultimately in re-educational courses.

Men in the convalescent stage in the military convalescent hospitals, when unable to carry on vocational work, attend classes in a great variety of subjects. These classes are under the most competent instructors which we can secure; as far as possible the classes are held in the hospital or adjacent buildings. Classes are provided in bookbinding, machine shop work, typesetting, mechanical draughting, architectural draughting, art metal work, motor mechanics, farm tractor machinery, poultry farming, hog raising, glass gardening, gardening, shoe repairing, boot-making, stenography and commercial work, sign painting, illustrating and a variety of other occupations. It has been found in many cases, that men learn enough during the convalescent stage to take on greater responsibilities upon their return to civil life, and also to engage in entirely new trades and occupations. In these classes are found many men who never before enjoyed the opportunity of going to school, and for the first time they are enabled to learn reading, writing and the simple rules of arithmetic. It not infrequently happens that men here reveal latent ability and talent which would never have otherwise been uncovered. Instances have frequently arisen where men have been able to graduate from one of the lower trades to an occupation which will command vastly greater remuneration and a higher social standing than that enjoyed before the war. The stimulant to the mental faculties and the consequent raising of the standard of intelligence of the labouring man as the result of the work done in these classes is most apparent, and the medical officers are generous in their admiration of the remarkable aid which this work is to the general rapid convalescence of the men.

While bedside occupational work and vocational training during convalescence has accomplished much for our men, the more serious phase of the vocational work is that of vocational re-education.

In June, 1916, the Government of Canada passed an Order in Council granting re-education courses to the members of the Canadian Expeditionary Force and also to the Reservists of the Forces of Great Britain and His Majesty's Allies in this war. Such Reservists must have been *bonâ fide* residents of Canada at the outbreak of the war and must be unable to return to their previous occupations by reason of their disability incurred on service. These re-educational courses are started after the man is discharged from the Militia, and for this purpose he is taken under the control of the Invalided Soldiers' Commission.

A scale of pay allowances for men undergoing a re-educational course was adopted, which is extremely generous, as will be seen from the following citations:—

- (a) A single man living in the institution secures free board and washing and is allowed £1 14s. per month. Where the total amount received by way of pension, and this allowance is less than £3 8s. per month, an additional allowance is granted, so that the minimum amount receivable shall be £3 8s. per month in addition to free board and washing.
- (b) A single man living out receives £1 14s. per month, plus 4s. per day subsistence allowance. Where the total amount received by way of pension and these allowances is less than £9 14s. per month an additional allowance is granted so that the minimum amount receivable is £9 14s. per month.
- (c) Married men living in receive free board and washing and £1 14s. per month, with the following additions:—
 - (1) For wife having no children £7 7s. per month, less pension of husband; (2) if with one child under maximum age of 17 years, for a girl, and 16 years for a boy, £8 7s. per month, less pension of husband and allowance for children under the Pension Regulation; (3) if with six children under the maximum ages, £12 per month, less pension of husband, and allowance for children under the Pension Regulations.

Other provisions are made for the case of a widowed mother dependent entirely on the support of an unmarried son and for the parents of a man who are both old and incapable of work and totally or partially dependent on the son.

Re-education courses are granted for periods extending from three to twelve months and at present embrace 120 trades and occupations. The procedure in granting a re-education course is as follows:—

All convalescent men are interviewed by a special interviewing officer attached to the staff of the District Vocational Officer as soon as the man is available upon his return to Canada. His industrial, educational and person history is secured at this interview and recorded on a special form. This report is available when the man is discharged and considered a case for re-education

under the terms of the Order in Council providing for same. The man is brought at the proper time before a Disabled Soldiers' Training Board. His case is given very careful consideration, and he is directed by the Board in the selection of an occupation, profession or trade suited to his disability and one in which it is felt his mental equipment, after proper instruction, will enable him to obtain success, and a higher rate of remuneration than he hitherto enjoyed. The Disabled Soldiers' Training Board, after enabling the man to make his choice and approving it, forward their recommendation to Headquarters at Ottawa, where the case is again thoroughly gone into by a special Board, and the recommendation is either confirmed or disapproved. If the recommendation is approved and the course is granted, the man immediately starts his course and is placed on pay and allowances with the Invalided Soldiers' Commission. The re-educational work is centred as far as possible in the larger industrial cities in each province. The men are given free transportation to these cities and every provision made for their comfort in entering upon their course upon arrival. The Provisional Governments and Universities in Canada have co-operated most generously with the Invalided Soldiers' Commission by placing at their disposal every facility for organising and carrying on instructional work in their institutions under the immediate control of the Provincial Vocational Officer. The instructional staffs are selected by him and are paid by the Invalided Soldiers' Commission. As far as possible the instructional staff is chosen from the returned officers, non-commissioned officers and men, and only such civilians are employed when absolutely necessary, as are not under the terms of the Canadian Military Service Act. It is the policy of the Invalided Soldiers' Commission to utilise as far as possible the facilities available in all large manufacturing institutions in the centre where the work is being carried on, for the purpose of imparting a large part of the training to the men. In this way the men have an opportunity of adapting themselves gradually and unconsciously to the environment of industrial activity. By the time their course of training is completed the final assumption of work in an industrial concern is natural and free from the abruptness which would follow were the training entirely confined to a technical school or university. Where training can be given in industrial shops, the scheme followed is to do all the preliminary work for the first half of the course, in the classes in the technical schools or universities, and the remaining half of the work to be completed in the factories or industrial establishments. Another advantage of this scheme is, that in the great majority of cases the problem of finding employment for these men is solved, because the men are automatically absorbed, if efficient, into the plant where they have received their training. Some idea of the growth and present extent of the work carried on in Canada can be gained from the following statistics:—

Feb., 1917. Feb., 1918.

Number of instructors	38	492
Number of men taking vocational training during convalescence	787	3,500

Feb., 1917. Feb., 1918.

Number of men taking bedside occupational work	0	500
Number of men taking re-educational courses	81	1,600
Number of different trades and occupations in which men are trained	25	120

The proportion of men undergoing vocational training and re-educational courses, to the number of men on the strength of the military hospitals in Canada, can be gained from the following figures:—

Feb., 1917. Feb., 1918.

Number of men on the strength of the Military Convalescent Hospitals in Canada	3,599	11,415
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To date approximately 425 men have completed their re-educational courses and have been returned successfully to civilian life and industrial activity. Great emphasis, in our re-educational work, is placed upon the importance of giving individual instruction, and it will be apparent by studying the figures of the number of instructors engaged in the work, that success has been achieved in this direction. The policy of placing men in industrial plants for the whole or part of their training, as circumstances permit, is justified, and has worked out wonderfully well, and great credit accrues to the patriotic impulse which enabled Canadian manufacturers to undertake gratuitously, and without any payment to the men, their training under actual industrial conditions by their foremen and workmen. While men are undergoing their re-educational course, while in classes or in the factories, they are under the constant supervision of inspecting officers and medical officers of the Commission so that, as far as possible, conditions which would militate against their health and success, are eliminated. These officers also study the home conditions of these men with a view to making their lot while undergoing this course as happy and free from worry as possible. This social welfare work is most important, and is even followed up after the man has completed his course and secured employment.

The finding of employment of all men returned to Canada and discharged is vested in Provincial Employment Associations, who, to date, have carried out their work with conspicuous success. Close touch with these Employment Associations is maintained by Vocational Officers, who assist them in every way possible. They particularly devote their energies to finding suitable employment for those men who have taken vocational training during convalescence or re-educational courses. For this purpose and for the purpose of determining the best industrial establishments in which men can be trained, each re-educational centre has a specially selected officer designated, an industrial surveyor who devotes his entire time to making a logical and

complete survey of the facilities in these establishments for training and employing men.

It is impossible in the brief time allotted to me to give more than a brief outline of our work in Canada, but I hope that I have conveyed to you the impression that Canada is straining every effort to solve satisfactorily the problem of returning men to civil life and industrial activity with the utmost thoroughness and expediency. We feel that every country is a pioneer in this hitherto unknown problem, and in common with other countries we welcome this great opportunity of conferring with one another with a view to evolving the very best methods and means of accomplishing our high purpose—the discharge of our country's full obligation to her valiant men who voluntarily sacrificed personal interests and comforts and that of their dependants to such an enormous extent in order to assist in defending the world against the menace of Prussian Militarism.

THE TRAINING OF THE DISABLED SOUTH AFRICAN SOLDIER AND ITS LESSON.

BY LIEUT.-COLONEL E. N. THORNTON, O.B.E., S.A.M.C.

Different Problems from those of Other Countries.—Just as the part played by South Africa in the present World War is different from that of any of the other Dominions or Allied Countries, so the problems which arose in connection with her disabled soldiers are exceptional. The decisions arrived at and the system adopted are giving such satisfactory results that it seems to be worth while to place them on record.

Different Campaigns.—On the outbreak of war South Africa was faced with rebellion in a section of its white population, and when this was quelled she undertook to deal with German South-West Africa. At the conclusion of the latter campaign, which was undertaken by her troops alone, she sent a small Expeditionary Force to Europe, and shortly afterwards a larger force to German East Africa to co-operate there with Imperial and Allied troops in the reduction of that country. She has been operating in the Union, in German South-West Africa, in German East Africa, in Egypt and in Europe.

Casualties.—Happily our forces did not suffer very heavy casualties during the rebellion and the German South-West African Campaign, but with the despatch of troops to Europe and German East Africa it became evident quite early that special steps would have to be taken to cope properly with disablement problems.

In German East Africa it was not anticipated that casualties other than from disease would be particularly heavy, whereas it was expected that casualties from wounds in Expeditionary Force in Europe would be at least as heavy in proportion to the numbers engaged as those of other countries.

No Limb Factory, and Insufficient Means for Technical Education in South Africa.—The outbreak of war found South Africa without any facilities whatever for the manufacture of modern artificial limbs, and with insufficient means, except at two or three of the larger towns, for the technical education of the civil population.

It was considered unlikely that a factory for artificial limb-making could be opened in South Africa during the course of the war, for expert limbmakers were more urgently required in Europe, and the cases actually occurring in South Africa were relatively few in number. It was also clearly impossible to send patients back to South Africa until more or less recovered from their injuries, so that all these various issues pointed to the advisability of establishing in the United Kingdom all the machinery necessary for the proper treatment of disabled soldiers.

Erection of Hospital in London.—The Committee of the South African Hospital and Comforts Fund specially erected a hospital in Richmond Park, and it was arranged that all permanently disabled men should be admitted to that hospital. This arrangement enables the permanently disabled men of the European Expeditionary Force to be brought at an early stage of their illness to the notice of the South African Authorities.

Cases who have lost limbs in Africa are given the opportunity of being brought to England for the purpose of being fitted with artificial limbs, and, if they so desire, of undergoing Vocational Training.

Vocational School at the Hospital.—The Vocational Training School is established in connection with the hospital and in the same grounds. It consists of buildings erected jointly by the Committee of the South African Hospital and Comforts Fund and the Committee of the Governor General's Fund—the latter being responsible for the cost of equipment, salaries of staff and running expenses generally. Some large houses also in the vicinity have been taken and converted into hostels for the accommodation of out-students.

Vocational Staff.—The Vocational Training Staff consists of nine instructors under an Educational Organiser. Training is given in the workshops to enable the men to become expert workmen in a large number of trades.*

The arrangements are noticeable in that highly skilled professional instructors are employed. As a result not only is work being turned out up to an expert standard, but the men realise that an extraordinary opportunity is being afforded them.

The workshops are registered by the City Guilds, and the various classes are inspected periodically by experts.

Procedure on Admission.—When a patient is admitted to the hospital, whether from the European Expeditionary Force or from Africa, he is at once put into one or other of three categories, namely :—

- (1) Likely to become fit for further military service ;
- (2) Doubtful whether will be fit for further military service ;
- (3) Unlikely to be fit for further military service.

If in Category 1 or Category 2, the patient is given curative treatment only, but if in Category 3 steps are taken at the earliest

* The callings taught are those of Metal Turners and Fitters, Tool Makers, Brass Finishers, Coppersmiths, Tinsmiths, Engine Drivers and Attendants, Acetylene Welders, Electrical Fitters for Power, Light, Telephones and Bells, Cinematograph Operators, Electrical Testers, Meter Readers, Dynamo and Switchboard Attendants, Sub-station and Accumulator Attendants, Motor Car Drivers and Repairers, Carpenters and Joiners, Cabinet Makers, Boot Makers and Boot Repairers, Clerks, Storekeepers, and Timekeepers, Bookkeepers and Accountants and Salesmen, while some students are sufficiently advanced to take positions as Secretaries and Managers.

possible moment to go into his case, with a view of ascertaining whether he will require Vocational Training, and if so to interest him sufficiently so that when convalescent he will be keen to take it up. Close relations are established between the Vocational staff and the staff of the Hospital proper, and every influence is used by doctors, sisters and lady visitors to get permanently disabled men interested in the classes as soon as possible. As a matter of fact, it is found that patients generally can be interested in work at a very early stage of convalescence, and often long before they are well enough to get out of bed.

Hope for the Disabled from Early Days.—The members of this Conference are well acquainted with the waves of depression which come over a limbless or otherwise permanently disabled man in the early days of his illness—depression which retards his recovery and maybe permanently distorts his mental outlook. The fact that work is going on around him which offers hope for his future; that he himself is brought from the earliest days into thinking what his work can be, and that then, at an early date, he can commence to take up such work himself, goes far to ward off these attacks of depression.

Under our scheme the men start earlier than in any other institution in the United Kingdom, as this hospital is the only primary hospital which has Vocational Training Classes established in connection with it.

No Compulsion Exercised.—It must be stated that no compulsion of any sort is adopted. The Vocational staff have access to the permanently disabled patients in the wards for the purpose of discussing their future and of seeing whether they can interest the men in the work. Such patients are advised by their doctor or Ward Sister to attend the classes. There the matter ends. If they do not go, they are not penalised in any way. If they go, they can discontinue at any time, and it is remarkable that so few do discontinue their attendance when once they have made a start.

Decision as to a Patient's Future Career.—Three factors are taken into consideration in deciding as to a patient's future career. Firstly, and most important, the man's own inclination. Secondly, his physical disability and his suitability for the calling from a medical point of view; and thirdly, his suitability from an educational standpoint. These are settled early at a joint conference of the patient, the doctor and the Educational Organiser, and generally without any great difficulty.

Class Work Done Under Medical Supervision.—The class work is done under the strictest medical supervision. Patients are started gradually; at first they work, it may be, for a few minutes, then longer, according to their inclination and their medical fitness until they are able to work throughout ordinary class hours. Some of them commence typewriting in bed. It amuses them to write their letters home by typewriter. What at first is recreation leads the way to work in earnest. This gradual return to work opens up a vista of future usefulness.

Facilities for Recreation.—While no compulsion is exercised in regard to students attending classes whilst still patients in hospital, they do not lose their out-door recreation. Indeed, if sufficiently well they actually gain hours to themselves. Thus these patients attend their classes mainly in the mornings, and instead of having to wait by their bedsides until the Medical Officers have left the wards on completion of their rounds, they have their dressings done first before all other patients, and are allowed to go to the classes. A minimum of twelve hours' attendance per week earns two late passes per week, and extra indulgences in the way of early passes on Saturdays and Sundays.

Frequent excursions, outings, &c., are arranged, and every man attending the classes has the opportunity of going out according to his fitness. Every Saturday afternoon disabled men who wish, and are well enough to go, attend football matches, while on Wednesday afternoons they have the opportunity of visiting factories or other places of some educational interest if they are so inclined:

Needs of Agriculturists.—Although the bulk of the disabled men are townsmen, the needs of students desiring an Agricultural Training are not overlooked. In practice, if a disabled man desires to take up farm work, he first puts in his time learning to make himself a handyman in the different shops connected with the hospital, and he is instructed in farm book-keeping. On leaving the hospital he takes up further training, either at an Agricultural School in England or in South Africa.

Successful Students.—A number of the students have already passed examinations of the London Chamber of Commerce and the National Union of Teachers, first-class certificates being obtained in quite a considerable proportion of cases. Arrangements have similarly been made for the examination of men in the workshops by the various London Guilds, and it is hoped that the majority of men will be certified as competent workmen not alone by the Vocational Training School, but also by a competent Authority outside.

Students not Retained in Hospital.—No man is allowed to be kept as a hospital patient a day longer than is necessary for his medical treatment, but he is discharged from hospital at the earliest possible date, and is kept as an out-student, where he can, if necessary, still receive medical treatment as an out-patient.

On Discharge from Hospital Patients Remain Union Soldiers.—On discharge from hospital the men are not discharged from the Army, but are kept on as Union soldiers in hostels close to the hospital, and continue their studies at the hospital workshops. The men wear uniform, and are subject to military discipline. The training as out-students remains voluntary, in so far that no one need undergo it contrary to his wishes, nor continue it longer than he chooses. So long as he elects to continue it, however, he is obliged to submit to military discipline.

Inducements to Remain on Discharge from Hospital.—The greater number of students who have attended as hospital patients continue as out-students on discharge from hospital. The inducements in the case of limbless men are threefold.

Firstly, the incentive of becoming proficient at their trade. Secondly, the desire to have shrinkage of their stumps more or less complete before their return to South Africa; and lastly, the offer to each student, on completion of his course, of a second artificial limb as a joint gift from the South African Hospital and Comforts Fund and Red Cross, South Africa, as well as, in leg cases, a peg leg from the Government. The majority of students can learn sufficient at Richmond to ensure a good livelihood on return to South Africa, but wherever possible they are placed in factories or workshops in England for a few weeks prior to embarkation, so as to get practical experience under normal working conditions. During their training as out-students the men receive their pay as soldiers and are subsisted in the hostels, while their wives or relatives continue to receive the usual soldiers' separation or dependents' allowances. The men, when trained, are sent back to South Africa, with a few exceptions who have found good posts in England. Very few of the men under training have been failures, and I believe the fact that it has been possible to keep them under military discipline, and not as civilians, has been responsible in no small measure for the success which has been achieved with the men who have been discharged from hospital.

Arrangements for Reinstatement in Civil Life.—A word should be added as to the arrangements for re-instatement of the men in civil life on return to South Africa. The problem has been placed by the Union Government in the hands of the Central Committee of the Governor-General's Fund, and the whole Union has been divided into areas with a local committee in charge of each area, on whom the responsibility rests for finding employment for returned soldiers.

Progress Reports.—On a man's admission to the workshops a full report is prepared as to his previous employment, physical disability, and the trade for which he is to be re-educated. This is sent to the Union Government, with copies for the Central Committee of the Governor-General's Fund and for the Local Committee of the area in which the man desires to live on return to South Africa. Copies of Progress Reports on each case are sent in from time to time to these Committees, so that they have complete information well in advance, and should have little difficulty in finding suitable work for him on his return. Indeed, a considerable number of the students have been notified already prior to their return that suitable work has been found for them which they will be able to take up at once on their discharge from the Army on return to their homes.

The scheme has the blessing and sympathy of the Imperial Authorities. It is worked with the full knowledge and approval of the High Commissioner for the Union of South Africa on

behalf of the Union Government and of the Committee of the Governor-General's Fund. The High Commissioner exercises supervision in close concert with the South African Hospital and Comforts Fund in London. The interest thus taken in the work is shared by the whole of the South African community in London, and has contributed largely to the remarkable results obtained. Every man, however crippled, who passes through the training is treated as a valuable asset to the Union, to which ultimately he returns.

Each Country has Two Objects in View.—Such is the South African scheme of Vocational Training. It is designed to meet a small problem compared with that of the Allied Countries and other Dominions, for South Africa has one of the smallest white populations of any of the nations represented at the Conference—a little over a million and a quarter. I take it, however, that each country has two objects in view: Firstly, to put permanently disabled men into the best possible physical condition, and secondly, to train them to be self-supporting members of the community. There seems to have been a tendency in most countries to regard the latter as impossible until the former has been accomplished, or nearly accomplished, by which time many men are unwilling to take up training.

The Objects can be Achieved Together.—Our scheme aims at attempting to achieve the two objects together. Under it approximately 90 per cent. of those disabled men for whom Vocational Training is appropriate are induced, in their own interest and quite voluntarily, to take advantage of the opportunities afforded them. Such a satisfactory result is due to the facilities for early training, which enable patients to become interested in work in the early days of their illness and before they have become thoroughly hospitalised.

Conclusion.—The importance of impressing upon members the desirability—I might almost say the necessity—of commencing training sufficiently early has led me to bring the South African scheme to the notice of the Conference.

Y A-T-IL LIEU DE REEDUQUER LES MUTILES DANS DES ECOLES SPECIALES?

PAR M. ALLEMAN.

L'élan d'enthousiasme qui porta, dès la première année de la guerre, des esprits utopistes à réaliser hâtivement la restauration professionnelle des mutilés s'est heurté à d'amères déceptions : on avait rêvé de restituer, en quelques mois, à l'activité économique, anémiée par les besoins de la guerre, des éléments qui avaient perdu leur valeur productive, et d'autre part d'assurer l'existence par le travail, aux épaves de la terrible tourmente. Or l'expérience a prouvé que la formation professionnelle bâclée rapidement ne donne aucun résultat pratique, que les mutilés sortant d'une courte période de rééducation, végètent pendant quelque temps dans la nouvelle profession, pour se jeter ensuite sur un "petit poste" ou sur une spécialité des industries de guerre qui peut les faire bien vivre pendant l'époque actuelle, mais les mettra sur le pavé dès que reviendront des conditions normales.

Pas plus avec des mutilés, qu'avec de jeunes apprentis—moins pourrait-on croire, puisque leurs aptitudes physiques sont réduites—on ne fait des miracles. L'apprentissage d'une profession exige un minimum de temps, sans lequel il doit nécessairement rester incomplet; et cela est un grave écueil dans le problème de la rééducation des invalides.

Ainsi se pose la question : Convient-il de soumettre les mutilés à une formation professionnelle normale et de les rééduquer dans les écoles professionnelles qui, en temps de paix, préparent les jeunes gens à la pratique des métiers?

Les avantages de ce système paraissent à première vue considérables.

Pas plus pour l'apprentissage pratique que pour les études scientifiques, on ne s'improvise professeur. L'instructeur ne doit pas seulement posséder à fond tous les détails du métier, il ne doit pas seulement connaître toute la technique de la profession, il faut aussi qu'il sache *enseigner*. Or l'enseignement demande des aptitudes particulières, une tournure d'esprit spéciale, un enchaînement méthodique des idées, qui ne se développent ou ne s'acquièrent sans une préparation pédagogique sérieuse.

Le bon instructeur sait à quel moment il doit appeler l'attention de ses apprentis sur tel détail, il connaît les défauts inhérents aux débuts et la manière de les corriger; il évalue l'importance des notions techniques à joindre à la pratique. De plus il sait *conduire* les élèves; il connaît la psychologie de ses hommes et distribue avec discernement le blâme ou l'éloge; il conquiert aisément la confiance de ses apprentis—qui est un sûr garant du

succès—et son autorité s'établit sans discussion, comme résultante de ses qualités professionnelles.

La valeur de l'instructeur fait la valeur de ses élèves.

Dans ces conditions il apparaît de toute utilité de mettre à la disposition des mutilés l'expérience de l'enseignement acquise par les maîtres qui, dans les organisations du temps normal, sont chargés de la formation professionnelle de la jeunesse.

Ce qui ne s'improvise pas non plus—on n'en a que trop souvent fait l'expérience—c'est l'organisation d'une école. On a beau être animé d'ardente sympathie pour les mutilés et leur sacrifier sans compter son temps et son bien, on n'en possède pas pour cela les qualités et les connaissances nécessaires pour installer des locaux, fixer les distributions du temps, arrêter des programmes d'enseignement, établir des règlements, choisir et guider le personnel, orienter les invalides vers une profession, créer tous les détails qui constituent par leur ensemble les éléments indispensables au fonctionnement complet d'un institut d'éducation professionnelle. Tous ces desiderata sont réalisés dans les écoles pratiques des métiers mieux qu'ils ne pourraient l'être dans les établissements éphémères nés de la guerre et destinés à disparaître peu après sa fin.

On installe facilement un atelier de cordonnerie, d'ébénisterie, mais qu'il s'agisse de créer un apprentissage qui demande un outillage mécanique varié, des appareils de démonstration, des collections d'échantillons, des moyens d'intuition qu'il faut des années pour rassembler ou constituer, que de difficultés, que de dépenses! Faute de pouvoir réunir aisément tout ce matériel qui caractérise l'organisation scolaire complète, on se contente des rudiments indispensables et l'on obtient un "à peu près" dont le rendement répond aux moyens.

Mais si l'utilisation des compétences du personnel, de l'organisation et de l'outillage pédagogique de nos écoles professionnelles semblent de prime abord plaider pour la rééducation des mutilés dans ces institutions, il n'en est plus de même lorsqu'on envisage tous les inconvénients qui résulteraient de semblable mesure.

Les écoles pratiques des métiers prennent les jeunes gens à la fin de leurs études primaires et visent non seulement leur formation professionnelle, mais aussi leur éducation, c'est-à-dire la culture de leur intelligence, de leur volonté, de leurs sentiments. De là des développements de programmes, que la tendance nécessairement utilitaire de la rééducation des mutilés fait proscrire et que la qualité *d'homme* de l'invalidé à rééduquer rend superflus.

Tout en poursuivant une restauration professionnelle complète, l'école de mutilés doit veiller à réduire sa durée au strict minimum et, par conséquent, elle est forcée d'élaguer les programmes, les matières et les parties de branches qui ne trouveront pas directement leur application dans la pratique du métier.

De plus la simultanéité de l'enseignement dans les écoles professionnelles impose une durée uniforme pour la préparation de tous les élèves, quelle que soit leur intelligence et leur application ; la hâte que l'on doit avoir de rendre aux mutilés des moyens d'existence ne permet pas de perdre leur temps à attendre les progrès de camarades plus lents ou moins doués.

Ces deux considérations suffiraient, à mon avis, à elles seules pour condamner la rééducation des mutilés dans les écoles professionnelles.

Il en est une autre cependant, d'ordre moral, qui est d'importance capitale. L'esprit taquin de jeunes garçons qui, espérons-le, garderont toujours le respect de leurs aînés. glorieusement estropiés, mais n'en sont pas moins enclins à des plaisanteries qui pourraient heurter la sensibilité des invalides, constitue un obstacle sérieux à l'ouverture des écoles professionnelles aux mutilés. De plus ceux-ci, handicapés par leurs infirmités, moins vifs d'esprit peut-être que leurs jeunes camarades valides seraient exposés à se décourager de se voir dépasser.

Si l'on juge, à juste titre, que la place de l'invalidé rééduqué n'est pas à l'usine, à côté d'ouvriers solides et intacts, à plus forte raison ne faut-il pas admettre que le mutilé en rééducation soit le voisin de jeunes gens qui poursuivent normalement leur études et leur apprentissage.

Enfin l'outillage d'une école de métiers est uniforme pour tous les élèves ; peut-il en être ainsi pour des mutilés ? Non, car c'est une préoccupation grave des spécialistes de la rééducation professionnelle des mutilés de doter ceux-ci des outils les mieux appropriés à l'état de leurs membres.

Serait-il, du reste pratiquement possible d'ouvrir les écoles professionnelles aux invalides ? Ceux-ci doivent commencer leur rééducation dès qu'ils sortent de l'hôpital, du centre d'appareillage ou de l'institut de rééducation fonctionnelle et ne peuvent pas attendre l'ouverture d'une nouvelle année scolaire pour se mettre au travail. Je sais que le séjour dans ces centres hospitaliers pourrait servir de préparation à l'école professionnelle, mais entrés à des dates différentes, les mutilés en sortiraient avec une préparation bien inégale ; les uns y auraient perdu du temps, les autres ne seraient pas aptes à recevoir l'enseignement qui leur serait destiné.

Je crois avoir établi suffisamment que l'admission des mutilés dans les écoles professionnelles serait très difficile d'abord et hautement préjudiciable à la bonne marche de la rééducation.

Dans quelle mesure pourrait-on toutefois tirer profit de ces institutions ?

En leur empruntant une partie du personnel expérimenté et en y soumettant les autres éléments chargés de l'enseignement à une préparation pédagogique sérieuse ; en s'inspirant de leur organisation et de leurs programmes, qui seraient adaptés au but particulier à atteindre.

Pour des spécialités exigeant un outillage mécanique varié ou difficile à réunir, l'admission des invalides aux écoles ordinaires semble seule s'imposer, mais encore faut-il que ces apprentis y constituent une section absolument indépendante, avec ses règlements et ses programmes spéciaux, avec sa méthode propre.

Le sacrifice peut paraître considérable, d'organiser et d'outiller un grand nombre d'instituts de rééducation professionnelle, alors que l'on possède déjà des écoles de métiers; mais la nation doit tout à ceux qui ont tout sacrifié pour elle et la preuve est faite que chez les Alliés on ne lésine pas pour assurer aux victimes de cette horrible guerre les moyens d'existence dans les meilleures conditions possibles.

Méthode d'apprentissage.

Faut-il adopter pour la rééducation des mutilés l'une des méthodes en vigueur pour l'enseignement professionnel de la jeunesse et qui consistent à faire pratiquer les gestes ouvriers pour les gestes eux-mêmes et non dans le but de produire un objet utilisable ou vendable?

Ces méthodes, pédagogique ou du sloyd, se sont imposées dans les écoles professionnelles ordinaires en raison du but éducatif qu'elles poursuivent. Le sloyd notamment, par l'initiative qu'il laisse aux élèves, en ce sens que les grandes lignes seules de thème à réaliser sont indiquées et que chacun orne ou décore à sa façon l'objet qu'il fabrique, présente de très sérieux avantages; mais il ne me paraît applicable que là où l'on dispose d'une très longue période pour achever l'apprentissage.

A la conférence interalliée de Paris en mai 1917, j'ai eu l'honneur de prôner la méthode productive, qui consiste à suivre le procédé appliqué pour l'apprenti à l'atelier, sauf à graduer méthodiquement les différentes opérations. Une année de plus d'expérience n'a fait que confirmer mon opinion à ce sujet.

Il importe que dès le premier jour, le mutilé en rééducation ait l'impression qu'il travaille et non seulement qu'il apprend ou qu'il s'amuse.

L'ambiance doit être celle d'un atelier bien plus que d'une école, parce qu'elle correspond mieux à l'esprit des élèves arrivés à l'âge où ils sont, et parce qu'on ne familiarisera jamais trop vite les hommes avec le milieu dans lequel ils devront vivre plus tard.

De plus, j'estime que l'intérêt des apprentis est bien plus vivement stimulé si l'objet de leur travail est un produit réel de leur industrie et non une miniature ou un modèle d'étagère.

Comment veut-on inculquer aux élèves le côté commercial de leur profession si le produit de leur travail ne correspond pas à ce qu'ils auront à livrer plus tard? Où est la préoccupation du choix de la matière première et de l'utilisation économique des déchets? Où est l'occasion d'apprendre à évaluer un prix de revient? Qu'est-ce qui peut porter les apprentis à comprendre qu'ils ont intérêt à travailler vite autant que bien?

Je crains que les hommes habitués à figner les travaux prescrits par les méthodes éducatives n'aient une cruelle déception le jour où ils travailleront pour leur compte ou pour celui d'un patron, en constatant que leur rendement est insuffisant en quantité.

A ces arguments puisés dans l'intérêt du mutilé lui-même s'ajoute le point de vue économique de la question.

Il est bien entendu que nul sacrifice n'est trop grand, consenti pour la rééducation des invalides. Mais en ces temps d'utilisation parcimonieuse de toute matière et de rareté de main d'œuvre, ne vaut-il pas mieux transformer en objets utilisables dans la vie de la communauté les matières premières consacrées à l'apprentissage des mutilés? Il y a profit pour la masse et réduction considérable des frais de la rééducation.

Toutes ces raisons me paraissent péremptoires pour s'arrêter dans la rééducation professionnelle des mutilés à la méthode productive.

Plans d'apprentissage.

Le procédé préconisé plus haut de la méthode productive d'apprentissage n'est pas sans présenter certains écueils.

Lorsqu'on applique une des méthodes éducatives, telles qu'elles sont en usage dans les écoles professionnelles ordinaires, on n'hésite pas à graduer les opérations à enseigner aux élèves, étant donné que leur ordre a fait l'objet d'études systématiques.

Il n'en est pas de même si les hommes apprennent le métier dans un atelier proprement dit, vivant des commandes telles qu'elles se présentent, au jour le jour.

C'est précisément cette situation qui cause à l'adolescent, dont la formation professionnelle est confiée à un patron quelconque, un retard si grand dans la poursuite de son apprentissage : sans souci de l'intérêt de son élève, le maître lui confie le travail qu'il exécute le mieux et le plus rapidement, parce que son profit personnel en dépend.

Il est incontestable que, par ce procédé, l'apprenti zélé atteint dès le début la perfection dans des opérations de détail ; mais toutes ces opérations devant revenir fréquemment dans le cycle complet de l'apprentissage, il aurait trouvé l'occasion de s'y perfectionner dans la suite, tout en apprenant du nouveau, si l'on s'était contenté d'une précision et d'une dextérité relatives dans l'exécution d'un élément du travail.

De plus il peut se présenter que les commandes reçues à l'atelier n'offrent pas l'occasion d'étudier tous les travaux qu'un artisan accompli peut être appelé à effectuer ou que du moins, l'apprenti n'y est pas initié. De là des lacunes dans la formation, qui, plus tard, seront peut-être comblées au détriment du client ou de l'employeur, mais qu'il importe d'éviter dans la rééducation des mutilés.

Deux choses sont nécessaires à cet effet : —

- (1) faire un choix judicieux des commandes ;
- (2) établir des plans d'apprentissage complets et détaillés.

Le chef consciencieux d'un atelier de rééducation ne recherchera et n'acceptera que les commandes qui intéressent directement ses apprentis. Il condamnera généralement les travaux en série, sauf lorsqu'il a un nombre très grand d'apprentis qui tous, dans ces travaux, peuvent s'initier à un détail de la profession à un degré quelconque de leur préparation.

Il désignera en outre pour l'exécution de telle commande l'homme ou le groupe d'hommes arrivés au point où ce travail leur fera faire fin nouveau pas dans la préparation professionnelle.

Le choix des commandes et la distribution des travaux doivent être l'objet des principales préoccupations du chef d'atelier.

La recherche de l'ordre méthodique dans lequel se suivent les diverses opérations du métier conduit à l'établissement d'un plan d'études.

Je me permets de signaler ici la solution de cette question importante qui est adoptée à l'Institut de rééducation de Port-Villez.

L'apprentissage complet de chaque profession comprend quatre degrés et chaque degré comporte l'étude d'une série déterminée d'opérations. Pour chacune de ces opérations, une durée moyenne d'apprentissage est établie, qui n'est toutefois nullement immuable, et s'abrège ou se prolonge d'après l'intelligence, le zèle, l'aptitude de chaque individu.

A la fin de chaque mois, les chefs d'atelier établissent des "notes d'apprentissage," où ils consignent, outre des observations personnelles, pour tout élève le point exact où il en est arrivé.

L'étude de ces notes et leur comparaison avec le plan normal permet à la direction de se rendre un compte exact des progrès réalisés par chacun, de rechercher la cause des retards, de constater éventuellement des erreurs d'orientation professionnelle et d'y remédier.

Ces notes d'apprentissage et le classement par degrés des élèves constituent de plus un vif stimulant pour ceux-ci, qui apprécient bien mieux les progrès qu'ils ont réalisés par une côte d'appréciation en chiffres de leur degré d'avancement que par le rendement effectif de leurs efforts. Ils savent que pour passer de tel degré au suivant, il leur reste telles opérations à apprendre et ils s'y appliquent avec d'autant plus de zèle que le but est assez proche et nettement marqué.

Un autre stimulant se joint à celui de l'amour-propre, c'est le taux du salaire qui monte d'un degré à l'autre : au 1^r, 6 cmes ; l'heure ; au 2^e, 8 cmes ; au 3^e, 11 cmes ; au 4^e 15 cmes. Quoique

l'appât du gain immédiat ne doit pas être l'objectif essentiel de leurs efforts, les mutilés apprécient beaucoup les progrès qui se traduisent par une augmentation de leurs allocations.

Enfin l'établissement du plan d'apprentissage doit nécessairement envisager les subdivisions de la profession, qui constituent dans certains cas des spécialités, auxquelles des mutilés peuvent s'arrêter, si leurs aptitudes ne leur tolèrent pas de tendre à une formation complète ou si les conditions du travail de la région où ils habitent permettent l'exercice lucratif d'un "sousmétier." Dans ces cas, les notes d'apprentissage fournissent concurremment avec la fiche individuelle du mutilé—où sont brièvement consignées les caractéristiques économiques du milieu où vit l'invalidé, des indications précises pour conseiller la spécialisation dans une partie de la profession, même sans avoir terminé l'apprentissage complet.

A.—Titre d'exemple, voici le plan d'apprentissage de la
Vannerie.

Osier.

- 1^{er} degré, 5 mois, 1 mois : préparation de l'osier, fonds ronds de toutes dimensions.
 1 mois : fonds rectangulaires de toutes dimens.
 1 mois : fonds ovales de toutes dimensions.
 $\frac{1}{2}$ mois : ligatures de bords.
 1 $\frac{1}{2}$ mois : fonds spéciaux (bercelonnettes, fauteuils).
 2^e degré, 4 mois, 1 mois : montage et tressage des paniers ronds et ovales.
 1 mois : montage et tressage des paniers rectangulaires fermés.
 1 mois : bords ordinaires et anses.
 1 mois : bords tressés et bords de fantaisie.
 3^e degré, 4 mois : montage et fabrication de différents paniers à jour.
 4^e degré, 4 mois : montage et fabrication de différents modèles de fauteuils.
 1 mois : pieds de berceaux.

Note.—L'apprenti qui se destine à travailler dans un atelier peut se contenter des deux premiers degrés ; celui qui veut s'établir comme petit patron doit avoir terminé le quatrième degré.

Voici maintenant les notes d'apprentissage de cet atelier pour le mois de février.

- A. 3^e degré, 2^o mois : 2^o opération (3/2/2).
 B. 2^e degré, 3^e mois :
 C. 2^e degré, 2^e mois :
 D. 2^e degré, 1^{er} mois : à été maintenu à ce point pour insuffisance.
 E. 1^{er} degré, 5^e mois :
 F. 2^e degré, 2^e mois :
 G. 2^e degré, 4^o mois : peut être placé ; compte travailler pour un patron.
 H. 2^e degré, 3^o mois : progrès très rapides ; a fait en un mois les opérations de deux.
 I. 3^e degré, 2^o mois : 2^o opération.

- J. 2e degré, 4^o mois : stationnaire par suite de l'état de son bras.
K. 2e degré, 3e mois : bonne volonté, progrès lents.
L. 3e degré, 2e mois : le opération. Avancement rapide.
M. 2e degré, 1^r mois : stationnaire, souvent malade.
N. 3e degré, 1^r mois : le opération, blessé à l'épaule, avance
lentement.
O. 1^r degré, 2e mois : est à l'atelier depuis 4 mois ne fait pas de
progrès.
etc.

On se rend aisément compte de l'intérêt capital que présentent ces notes d'apprentissage, qui obligent d'une part le chef d'atelier à constater périodiquement les progrès réalisés par ses élèves et permettent d'autre part à ceux-ci, et à la direction de l'école de vérifier le degré d'avancement dans l'apprentissage.

Ces notes sont consignées sur les fiches individuelles des hommes, où un simple coup d'œil fait suivre la marche de la rééducation depuis ses débuts.

Ceci n'est pas de la vaine paperasserie; c'est un travail extrêmement productif que je me permets de signaler à l'attention de tous les dirigeants d'instituts de rééducation.

Conclusions.

- 1.—Il n'y a pas lieu d'introduire les mutilés dans les écoles professionnelles ordinaires, sauf dans des cas particuliers, et dans des conditions spéciales.
- 2.—La méthode productive doit être préférée aux méthodes dites éducatives.
- 3.—Il est du plus grand intérêt d'établir pour chaque profession un plan d'apprentissage et d'exiger périodiquement des chefs d'atelier des notes cotant le degré d'avancement de tous les élèves.

THE HANDICRAFTS IN RE-EDUCATION.

According to the adage disease and remedy are found together. Never can this have been more true than now. Problems and difficulties abound. So do solutions.

The streams of wounded and disabled men are met by counter streams of sympathy and the universal desire to help.

We have labour scarcity, but a new army of workers waiting to be trained.

The shortage of food and raw material reveals new possibilities of cultivation.

Our deserted villages have new populations of returning men waiting to be settled in them and bring new life in place of desolation.

Against depleted industries we can set the thousands of workers returning with new ideals and new ardour from the trenches.

The countryside, long melancholy with poor cottages, decaying industries, and arrested life, may be rejuvenated by the new armies of new craftsmen trained by those who have made British handicraft world famous, however neglected at home.

The assistance of British artists and craftsmen is essential to the success of any scheme of re-education, official or private. The defect of all schemes of training at present published lies in the failure of their promoters to employ, or even consult as teachers or advisers, men who have been remaking our national reputation during the last half century.

France has not made this mistake, the Central Empires have not made it; nor has Switzerland. France is making use of all her artists both in training and in preparation for a new industrial era, for an industry in which considerations of quality and fitness hold first place.

For the last 20 years the Central Empires for their own profit have farmed the ideas and inventive genius of French and British craftsmen.

Switzerland, in concert with the alertest brains in France, has within the last few months begun a campaign for the revival of industrial and decorative arts in all her cantons.

In all the schemes outlined for France and Germany the re-education of the wounded and disabled men and their re-absorption into productive life is felt to be of paramount importance, and both ideas are linked up with the idea of industrial reform. In this country much has been said for years past about the needs

of industry and the importance of handicraft, but now the increasing numbers of men in want of training makes of each a burning question.

Industry cannot be renewed without a new spirit; as the promoters of reform in France have said "henceforth the spirit of artistry must inform all that we do."

The craftsman differs from the ordinary workman only by the intensity of his concern for the quality of his work. Concern is the child of interest. Interest begets that love of the work which alone produces quality. Quality is the only thing which pays, and pays all the time.

We call ourselves a commercial nation. Let us learn in time to train our workers to care for that which profits, for fitness and quality in material and workmanship. All the rest will be added to us. The wounds of war and industry may alike be healed by the right training of our disabled men.

But to those of us who urge that the revival of handicraft is an essential factor in the revival of industry and that industrial revival demands first invention, handiness and adaptability, all of which are produced or cultivated by craft practice, it may be said that the world-trend is not towards individual crafts, but to large scale production, to repetition work, to automatic machinery. This may be true, but it is no less true that the more mechanical a man's livelihood, the less demand that work makes on his higher faculties, the more imperative his need of opportunities for the exercise of those creative faculties with which the meanest of us is endowed.

But there is another aspect of the problem.

Munition work has shown that increased output is the result of short shifts, and it is easy to see that this discovery may be widely applied. Short hours mean increased leisure. Leisure cannot bring happiness unless made useful and productive. Higher pay should mean a higher standard of life. With every rise in standard the luxuries of the lower become the necessities of the higher. Moreover, "those who work for princes must live like princes." This means better houses, better furniture, better education, higher amusements. All these are the province of the arts and handicrafts. Craft makes for culture in every sense but the Prussian. It is the antidote to Prussianism.

In addition to all this is the further consideration that even under the best conditions agricultural life, gardening, fruit farming, dairy work, all have their slack seasons. To make life fully productive these slack seasons should be employed in some form of craft by which the worker could supplement his earnings from the land. Agricultural life is enriched by these supplementary activities, a fact confirmed by the experience of France, Scandinavia, Denmark, Switzerland. Thus, the re-education of the disabled, the revival of agriculture, of industry, higher education and the raising of the standard of life all depend on

the right use of the handicrafts and on the full use of the energies of our craftsmen at the present juncture. The basis of training, of healthy agriculture, prosperous industry and commerce is provided by the handicrafts.

As a step towards this the creators of the various handicraft enterprises which have come into being in the past 25 years should be asked to direct training in their own workshops or in work centres set up in every district. The existing educational institutions and machinery should be used to the fullest extent. Each should become a centre of actual production and directed by men and women who are both skilled workers and designers. Men should be set at once to production; work is its own teacher. In such productive work the men, the teachers and the whole educational system would benefit greatly. The ordinary scholars of existing institutions could share in the work and instruction. Each enterprise would be a continual demonstration of the educational value of handiwork.

Where technical and craft schools are used as instruction centres facilities could be given for research in the crafts, trades and processes taught there. In this way education, creative activity and National life would be knit together more effectually.

In all cases local Advisory Committees should be formed, somewhat on the model of the Consultative Committees established by the London County Council, and attached to each training centre. These Committees, formed of masters, artists and craftsmen, workmen's delegates and educationalists would advise on methods of training and production.

They should be attached and should report to a central organising committee composed largely of craftsmen, designers and technical experts, workmen's delegates, manufacturers, the whole committee being responsible to the Ministry of Pensions in the first place and afterwards to the Ministries of Labour and Reconstruction.

Schemes of housing, urban reconstruction, town and village planning should aim at the provision of craft and industrial colonies or settlements, and craft or industrial villages, and in so doing should give to those familiar with the crafts some opportunity of advising on the arrangements of such villages.

The new housing schemes should not only give employment to large numbers of discharged men in the various crafts and arts connected with building, but should provide for the re-establishment of old industries.

Under the direction of competent artists and craftsmen the arts of the smith and founder, terra-cotta worker, modeller, plasterer, carver, metal-worker, potter, glass-worker, chair and furniture-makers and other crafts could be revived and settled in the new villages about to be created.

Neither artistic gifts nor desire have been lacking, but only opportunity. Can we not use the opportunity now that it has come?

The multiplicity of the new building schemes and their complexity will mean the creation of fresh transport organisations. They will require the construction of new roads, and, perhaps, the utilisation and repair of our inland waterways also.

In these activities men who have no bent for industry or handicraft can find useful employment; by aiming directly at constructive work the minor questions will fall into their proper places.

All the forms of craft activity indicated are essential to the full life of any Nation. They are invaluable as training and preparation for any form of industry, and even if the whole world is given over to automatic machinery, the crafts will be needed as a field for experiment, a relief from monotony and as an enrichment of life.

We may be asked how all these workshops, training centres, industrial villages are to be paid for. These enterprises are social investments, and public credit should be used to finance them. Doubtless municipal aid could be given in many cases. These enterprises should in time create new social assets; the principle of co-operative trading might be extended. The workshop centres, industrial villages, agricultural reforms we need could in a very brief space become realities if the co-operative plan were generally accepted.

What the Trades Union attitude to the new army of workers will be is of great importance, but there is every reason to expect their sympathetic help, for every man who acquires a new craft should be a member of a corresponding Union. It may well be that the Unions themselves may be transformed into something corresponding to Guilds of Mastery with all that word implies. They would then become once more schools and nurseries of government and centres of political, commercial and social order.

LA REEDUCATION AGRICOLE DES INVALIDES DE GUERRE EN ITALIE.

PAR LE DOCTEUR MARIO GUSMITTA.

Le problème du renvoi à la campagne des invalides agricoles apparaît, chez toutes les nations, d'un grand intérêt économique ; il a pour notre pays une importance presque vitale.

L'Italie, tout le monde le sait, est un pays essentiellement agricole. Le fait que sur 286,610.37 de km.² de superficie totale elle possède une surface agraire et forestière de 263,975.54 de km.², c'est-à-dire le 92 pour cent, et plus, de toute son extension, suffirait à le démontrer.

Néanmoins, de tout ce grand territoire dédié à l'agriculture, notre nation ne retire pas, en proportion, un rendement suffisant.

Parmi les causes, certainement nombreuses, de ce phénomène, quelques-unes dépendent des conditions naturelles et des milieux, comme la stérilité de quelques régions, les conditions climatiques, le paludisme, &c., &c., d'autres sont en rapport avec les conditions démographiques de notre population rurale.

Parmi ces dernières causes, l'insuffisance de la main d'œuvre agricole vient au premier rang.

Une telle constatation pourrait sembler paradoxale à qui sait que l'Italie fait partie des pays les plus riches en hommes : la densité de population est en moyenne de 126 habitants au km.² et, parmi eux, plus du tiers sont agriculteurs.

Pourtant, disons tout de suite qu'il s'agit de rareté relative et non absolue ; et cette rareté vient, d'une part des conditions spéciales de notre agriculture qui, à cause de l'inégale division de la propriété et de l'insuffisant emploi des animaux et des machines, demande un plus grand nombre de bras qui serait d'ailleurs inutile, d'autre part de la désertion trop facile et trop grande des champs par les populations agricoles qui émigrent à la ville où à l'étranger.

Des deux phénomènes, le premier (abandon de la campagne pour la ville), commun à toutes les nations, où l'industrie est plus développée que l'agriculture, est relativement peu considérable chez nous, tandis que le second, particulier à notre pays, atteint en temps ordinaires des proportions colossales déterminant chaque année l'exode d'environ un demi-million d'hommes, en grande partie agriculteurs, qui vont chercher un rendement plus rémunérateur de leur propre travail.

Etant données ces conditions, particulières à l'Italie, d'une continuelle et impressionnante diminution de la main d'œuvre agricole, et parce que, également en temps normal, il faut avoir

recours pour les travaux des champs à des bras moins actifs comme ceux des femmes et des enfants, il n'est pas possible et il ne convient pas, pour nous Italiens de renoncer aux dizaines de milliers d'invalides que la guerre actuelle met hors des lignes des combattants. D'autant plus que ces éléments, une fois rendus à la terre, lui resteront fortement attachés, ne pouvant évidemment émigrer à cause de leurs conditions physiques et de leur adaptation au milieu.

Mais nous ne voulons pas traiter les questions de la rééducation agricole des invalides seulement au point de vue économique national, mais, et par-dessus tout, au point de vue de l'intérêt privé du travailleur.

Nous négligeons même l'avantage de pouvoir immédiatement, et avec un moindre effort, tirer parti de l'expérience déjà acquise dans le travail habituel précédent.

L'important est de considérer si, dans les mêmes conditions, le rendement utile, et par suite le profit, de l'invalidé est plus grand si celui-ci reste dans l'agriculture où s'il se dédie aux métiers industriels ou aux emplois. Et la réponse se devine si l'on tient compte de la grande liberté d'action du paysan en comparaison de celle de l'ouvrier, des plus petites difficultés techniques et manuelles, de la moins grande responsabilité professionnelle, de plus faciles utilisations dans une infinité de travaux complémentaires des grandes cultures, enfin du plus sûr et du plus stable placement de la main d'œuvre en union avec les autres membres de la propre famille.

Si donc les idées ci-dessus sont les idées générales de caractère économique (et je néglige ici de parler de celles de caractère moral et social, bien faciles à imaginer) désormais connues de tous, sur lesquelles est fondée l'orientation professionnelle des mutilés agriculteurs, la lenteur et les difficultés à travers lesquelles s'est développée en Italie, l'œuvre d'assistance dans la rééducation agricole, pourront sembler étranges et peu explicables.

Et, à mon avis, la raison principale qui en Italie a mis un obstacle au développement rapide et efficace des institutions dédiées à l'enseignement agricole de nos militaires invalides c'est d'avoir manqué de direction fondamentale, d'esprit organisateur de la rééducation agricole.

Sur les principes fondamentaux, nous avons tous été d'accord et dès le début, de sorte que l'on ne mit jamais en doute dans un pays agricole comme le nôtre : l'importance de cet enseignement professionnelle ; la nécessité de ne pas enlever aux champs les bras même les moins valides ; le péril de l'exode à la ville des mutilés agriculteurs rééduqués dans les arts et dans les métiers industriels.

Mais si tels principes sont restés, en Italie, à peu près à l'état de conceptions théoriques c'est parce qu'ils ont manqué les directions d'action et par conséquent les organes qui sur de

telles directions auraient du pourvoir à l'application pratique de ces principes mêmes.

Il sembla dans les premiers temps, et aujourd'hui encore beaucoup le pensent, que la rééducation agricole signifiât un simple entraînement des paysans aux travaux des champs, et l'on discuta pour savoir s'il n'était pas le cas de renvoyer les invalides dans leurs familles, à peine guéris complètement et munis, en cas de besoin, d'appareils orthopédiques ou de prothèses, considérant qu'une activité nouvelle dans l'exercice du métier primitif serait sortie spontanément de l'exercice naturel.

D'autres, et ils furent nombreux, déclarèrent que l'on devait se borner dans les écoles de rééducation à apprendre aux mutilés l'emploi des instruments de travail qui leur convenaient ; et enfin la majorité estima que la plus complète intégrité de la rééducation devait consister à donner à l'invalidé une instruction élémentaire très simple et quelque enseignement professionnel complémentaire.

En partant de telles conceptions, il était évident que pour faire la rééducation agricole, un petit espace de terrain où on pourrait envoyer les mutilés au travail devait suffire ; et toute intervention organisatrice de la part de l'Etat ou de personnalités préposées à l'assistance des invalides devenait ainsi inutile.

C'est ainsi, en effet, que surgirent de nombreuses sections d'agriculture annexées à nos Instituts de rééducation professionnelle.

Maintenant, on ne peut certainement concevoir de cette manière la rééducation des travailleurs de la terre comme du reste toute autre rééducation de métier. J'ai cru bon, il y a quelque temps, de fixer ces idées en une formule : Faire la rééducation à l'agriculture veut dire prendre un agriculteur invalide et moyennant la restauration et l'exaltation, dans les limites du possible, de ses activités physiques, morales, intellectuelles et professionnelles, le rendre progressivement apte à exercer son métier intégralement ou dans la forme et dans la mesure qui lui sera permise par l'infirmité qu'il conserve.

Nous devons lui donner, en connaissance et en expérience, ce qu'il a perdu en force et en activité.

Le problème de la rééducation professionnelle est donc vaste et complexe, et par conséquent vastes et complexes doivent être les organes qui sont appelés à donner une solution pratique à ce problème.

Dans les premiers temps, l'Etat surpris par les graves et impérieuses nécessités de l'organisation militaire du pays, n'eût pas le moyen de s'occuper de ces questions, on dirait, d'ordre social. Nous devons toutefois rendre témoignage à la vérité : l'Etat reconnut, dès le début, toute l'importance de cette préoccupation, et il voulut donner une aide morale et matérielle constante aux initiatives privées qui naquirent aussitôt parmi nous. Seulement plus tard, alors que l'activité de personnalités et de particuliers était devenue plus vaste et plus intense, et la

nécessité d'une organisation devenant par suite pressante et inévitable, l'Etat se trouva contraint à intervenir. Ainsi furent prises des dispositions et émises des instructions qui aboutirent à la nouvelle Loi sur l'Assistance aux Invalides de Guerre du 25 mars 1917.

En ce qui concerne la rééducation agricole, nous n'avons eu durant toute cette période qu'une seule tentative d'action dirigée par l'Etat.

En août 1916 à la suite d'un Décret en faveur des Invalides, le Ministre de l'Agriculture et du Commerce de cette époque crut bon de réunir une Commission pour l'étude des moyens pratiques et rapides suivant lesquels pourrait s'accomplir, après des Instituts agraires, la rééducation professionnelle des mutilés agriculteurs.

Le but du Ministre était de voir s'il était possible de mobiliser nos écoles Nationales d'agriculture pour les destiner à la rééducation des invalides de la guerre.

La Commission nommée par le Ministère de l'agriculture, elle fut dissoute après deux réunions sans prendre ni décisions, ni mesures d'aucune sorte, et pourtant l'unique résultat de cette activité de l'Etat, si vite épuisée, fut l'institution de l'Ecole de rééducation agricole des mutilés à Pérouse.

L'Oeuvre Nationale qui s'est substituée à l'Etat dans la protection des Invalides par les dispositions de la Loi du 25 mars 1917 n'a pas apporté une contribution plus grande à l'Oeuvre des Invalides agriculteurs, bien que la brièveté de son fonctionnement, puisse, il est vrai, justifier jusqu'à présent son silence.

Ainsi parmi les associations nationales, seule la plus grande institution privée, c'est-à-dire la Fédération des Comités d'assistance aux invalides de la guerre, a démontré l'intérêt qu'elle prenait au problème de la rééducation agricole dans la seule forme qui lui était permise en n'encourageant l'exécution par les moyens matériels dont elle dispose.

Effectivement, dans une réunion du Conseil—1er juillet 1917—elle nommait une commission chargée de faire des propositions concrètes au sujet de la création de Sections agricoles spéciales près des maisons de rééducation; ou d'encourager celles déjà organisées, de manière que la plus grande partie des sommes offertes fût destinée à favoriser le développement de la rééducation agricole.

La Commission proposa une somme de 400,000 frs. à répartir entre les sections agraires instituées, ou en cours d'institution, ou à celles qui devraient être organisées dans 6 mois.

Le résultat de cette belle initiative de la Fédération ne fut pourtant pas conforme aux propositions de la dite Commission, parce que le Conseil fédéral qui examina ensuite la question ordonna de distribuer la somme disponible—divisée en parts de 50,000 frs. à tous les Comités Fédérés indistinctement, non avec

l'obligation mais avec la vive et pressante *prière* de les destiner au développement de la rééducation agricole. De cette façon, le stimulant d'indications impérieuses venait à manquer certainement; toutefois l'œuvre de la Fédération—même parce que seule jusqu'à présent en Italie qui eut prouvé d'une manière tangible qu'elle voulait se préoccuper du problème d'assistance aux invalides agriculteurs—a certainement servi d'efficace encouragement au développement actuel de la rééducation rurale.

Ainsi l'œuvre primitive de travail agricole de nos paysans mutilés, non soutenue ni assistée par aucune institution de l'Etat, non organisée et disciplinée par aucune association nationale, seulement aidée par quelque concours matériel bien modeste en comparaison de l'immensité des besoins—cette œuvre est née et s'est développée dans plusieurs centres de notre pays par la seule initiative de quelques personnes compétentes et de bonne volonté et par les seuls efforts d'associations locales.

Il n'y donc pas à nous étonner si nos Ecoles et nos Sections d'agriculture pour les militaires mutilés se ressentent des qualités et des défauts de cette improvisation locale.

Les défauts sont certainement graves et tiennent surtout—comme nous l'avons déjà dit précédemment—à l'absence d'une conception fondamentale, d'une direction initiale dans l'organisation de ces Instituts de rééducation agricole.

Les qualités—car il y a aussi des qualités—consistent en une plus grande élasticité de fonctionnement, en une plus grande adaption aux diverses exigences régionales, en une meilleure utilisation des éléments et des moyens locaux, en un choix plus important des divers types d'organisation professionnelle.

Et en effet, nos Ecoles agricoles de rééducation, de la plus modeste à la plus importante, présentent une physionomie spéciale, une marque particulière qui les différencie l'une de l'autre.

Créées, presque toutes près des Instituts principaux de rééducation professionnelle, dans plusieurs centres essentiellement industriels ou artistiques ou de culture intellectuelle, elles ont conservé leur caractère de simple succursale pour l'enseignement agricole, gardant des proportions et une organisation modestes. Dans d'autres centres—plus en contact avec le milieu rural—elles ont assumé un développement plus ample et plus complexe; dans d'autres enfin, où dominaient les Institutions de culture agricole, elles sont nées autonomes et bien caractérisées.

Nous pouvons par suite, grouper approximativement nos institutions d'enseignement rural en trois catégories :

Une première catégorie constituée par les écoles d'agriculture annexées aux écoles principales de rééducation (en font partie les Sections de Florence, Gênes, Livourne, Modène, Pise, Rome).

Une deuxième catégorie représentée par les Sections agricoles faisant partie des Instituts Professionnels complexes, qui par leur

développement ont atteint une organisation supérieure et presque autonome. Telles sont les écoles de Milan, Palerme, Pescia.

Une troisième enfin formée par les Ecoles de rééducation agricole exclusive, représentée par les Instituts d'Ancone, de Lecce, de Pérouse, de Voghera, de Turin.

Examinons séparément les institutions de chaque groupe particulier.

Le Comité de *Florence*, qui possède une école excellente et florissante de rééducation professionnelle avec les Sections de Villa Bondi et du Ponte alle Mosse, avait, dès le début du fonctionnement de ses Instituts, employé à l'entraînement agricole le jardin de la Villa Bondi. On y enseignait le jardinage et quelques notions élémentaires d'horticulture.

Durant ces derniers mois ayant eu comme concession une petite propriété près de Fiesole, elle y a institué une véritable Section agricole, mettant à la tête un expert en agriculture, et donnant l'enseignement technico-pratique dans les différentes branches des travaux de la campagne. Cette Section se trouve encore dans sa période d'organisation, et du reste, étant donné la prédominance des autres institutions de rééducation dans cette ville, elle n'a pas assumé un développement considérable.

L'Ecole agricole annexe de la Maison de Rééducation professionnelle du Comité de *Gênes*, située à Villa Raggio, constitue une Section de cette Maison même.

La Direction Technique est confiée au chef jardinier de la ville de Gênes, assisté d'un personnel compétent. On y donne, sous une forme théorico-pratique, l'enseignement d'agriculture générale, culture des champs, horticulture et d'une manière particulière la floriculture avec une attention spéciale aux greffes des vignes américaines.

Actuellement, on est en train de faire des installations pour l'élevage des animaux de basse-cour.

Jusqu'à présent la section dispose d'un demi-hectare de terrain augmentable en cas de plus grand besoin. L'École agricole n'a pas un nombre déterminé de places, mais elle est de plus en plus fréquentée par ceux qui, étant agriculteurs, suivent les autres enseignements professionnels. Elle compte aujourd'hui 43 élèves.

L'Ecole d'agriculture de Villa Corradini à *Livourne* constitue également une dépendance de la Maison de rééducation instituée par l'Association Livournaise pour l'assistance aux mutilés de guerre.

Elle est dirigée par le chef-jardinier de la ville de Livourne, Mr. Paoletti. On y donne un enseignement pratique sur l'agriculture en général, c'est-à-dire, culture des champs, horticulture, jardinage et élevage des animaux de basse-cour.

L'Ecole dispose d'environ dix mille mètres carrés de très bon terrain situé autour de l'Institut.

Depuis le jour de l'ouverture de l'enseignement jusqu'aujourd'hui, elle a été fréquentée par dix invalides et actuellement elle compte trois élèves.

L'Ecole d'agriculture de *Modène* a été créée dans le but de compléter les soins physiques et orthopédiques par l'exercice technique et méthodique de la profession habituelle adapté aux effets d'une bonne rééducation professionnelle : elle constitue donc une école de travail manuel pour l'entraînement des invalides agriculteurs. L'Ecole même est une section de l'Institut de rééducation professionnelle des mutilés et estropiés de guerre, créé dans cette ville par l'œuvre d'un Comité provincial autonome.

L'Ecole a lieu dans une surface de terrain mis en pré de 25,300 m.², situé dans la Villa San Faustino près de l'Institut et concédé gratuitement par la Ville ; on y a construit un pavillon en bois pour l'abri des ouvriers et du matériel de travail.

Pour cette École, l'on n'a pas établi un véritable programme, mais le Professeur C. Brighetti, qui la dirige, applique les blessés, avec l'aide d'un personnel expert, au défrichement graduel de ce vieux pré et à la culture des plantes potagères et d'autres produits adaptés au climat et au terrain.

Depuis cinq mois environ une cinquantaine d'estropiés de guerre travaillent quelques heures par jour exerçant ces membres offensés avec un visible profit. On se propose ensuite de compléter l'enseignement pratique par des cours fréquents d'instruction agricole.

La ville de *Pise*, bien qu'elle ait une modeste Maison de Rééducation, instituée par le Comité local pour l'assistance des mutilés de guerre, possède une École agricole annexe de l'Institut de San Remo.

L'enseignement de l'agriculture a été assumé par la Direction de l'Institut public agraire de Pise avec un programme approprié et précis et avec le concours du Prof. Avanzi chargé des cours d'agriculture pratique.

Le Cours est théorico-pratique et se fait en partie dans l'École qui dispose de plus d'un demi-hectare de terrain, transformé en potager, pré et jardin ; en partie, près de l'École publique agraire nommée ci-dessus.

La Maison de Rééducation de Pise possède aussi une étable modèle, un poulailleur et une garenne ; en outre elle a un atelier pour le travail des sabots, de la vennerie, des chaises, etc.

Le Comité de *Rome* pour l'assistance aux mutilés de guerre, en instituant à la Villa Mirafiori une vaste et belle Maison de Rééducation (actuellement complétée par la pré-rééducation à l'hôpital de Concentration installée au Quirinal) n'a pas eu l'intention d'y établir une véritable École pour l'instruction

agricole, mais elle a voulu constituer une Section de travaux champêtres pour l'entraînement de ses agriculteurs invalides.

Pour cela un vaste terrain, compris dans l'enceinte de la villa, a été employé aux diverses cultures horticoles et champêtres, sous la direction d'un expert qui pourvoit également à l'instruction théorico-pratique des sciences agricoles.

La Section d'agriculture est complétée par des ateliers pour l'enseignement des divers métiers plus communs de la campagne, et de nombreux travailleurs des champs, estropiés et mutilés, ont fait ainsi dans cette Section de Rome leur entraînement physique et professionnel.

Parmi les institutions agricoles d'assistance aux invalides de guerre, de la seconde catégorie—comme du reste dans toutes les autres formes d'assistance professionnelle—*Milan* vient au premier rang, grâce à la prodigieuse activité de son Comité, à la compétence des membres dirigeants et à la richesse des moyens dont elle dispose.

L'organisation de cette nouvelle Section est assez récente, car la création n'en fut commencée que vers la fin de juillet 1917. A cette époque, ayant acquis la Villa Pelitti à Precotto et exécuté les travaux les plus nécessaires, elle y transporta l'atelier pour la fabrication des sabots, des paniers et des balais et y forma le premier centre des laboratoires qui commencèrent à se destiner à l'agriculture. Elle dédia l'Etablissement à "Cesare Battisti" afin que lui soit consacrée l'importante somme que le personnel des chemins de fer italiens avaient recueillie, par souscription nationale, pour honorer la mémoire du martyr glorieux.

La Villa Pelitti, grand édifice à trois étages et une autre construction indépendante à deux étages, contiennent les dortoirs et tous les autres services annexes, de même que les installations didactiques et techniques pour l'enseignement agricole.

On y a en outre adjoint :

Une étable pouvant contenir cinq vaches pour fournir du lait et le travail de ce lait se fait dans une petite fromagerie voisine ;

Une écurie pour les animaux de trait employés pour les machines et les charrues ;

Une porcherie avec des porcs destinés à la reproduction ;

Deux garennes avec des animaux de races diverses ;

Un vaste poulailler avec des groupes de volailles de race italienne dorée ;

Un rucher pourvu de ruches de différents types ;

Une magnanerie avec des appareils pour l'élevage des vers-à-soie suivant le système de Lombardie et du Frioul ;

Des hangars pour abriter les machines agricoles ;

Une serre chaude pour la multiplication des plantes de jardin et une serre tempérée avec des carreaux de verre pour la semence précoce et pour le roulage ;

Un atelier de forgeron et de menuisier pour la réparation des appareils et machines, de même que pour la construction de matériel agricole.

Le terrain du jardin a été utilisé pour la culture horticole et contient également une pépinière d'arbres à fruit et de plantes ornementales.

Les champs de céréales et les prairies, de même que les essais des machines agricoles, se font dans des terrains peu distants de la Section.

Pourtant le nombre toujours croissant des élèves et la nécessité de donner constamment une organisation plus rationnelle et plus complète aux diverses Sections, ont contraint le Comité à louer un autre terrain vaste et contigu aux autres avec des maisons bourgeoises et des maisons rustiques qui permettront la construction de nouvelles Sections pour les industries secondaires, c'est-à-dire la fabrication des barriques pour le vin.

Dans cette Ecole on impartit l'enseignement théorico-pratique comme base d l'instruction professionnelle et l'on ne néglige pas l'Ecole élémentaire.

Ainsi les élèves passent plusieurs heures de la journée dans les écoles et l'autre partie du jour aux travaux agricoles dirigés et surveillés directement par un personnel expert. C'est durant ces exercices qu'ils s'habituent et se familiarisent avec les appareils orthopédiques et les prothèses de travail, et qu'ils apprennent à en apprécier l'utilité.

La Section agricole est dirigée par un professeur d'agriculture qui est à la fois instituteur et directeur. Il est assisté par un vétérinaire, par un maître d'école, par des chefs de travaux qui sont préposés aux Sections spéciales.

L'Ecole agricole de Precotto (Milan) contient une centaine de places, mais ce nombre augmente toujours à cause du développement constant de l'établissement. Et étant donné les installations vastes et complètes de cette Ecole, l'organisation technique qui en est sérieuse et rationnelle, le fonctionnement qui s'en montre pratique et parfait, l'on ne peut douter qu'elle prendra place, parmi les premières Ecoles, non seulement d'Italie, mais encore de l'étranger.

Mais la Section agricole de l'Institut Sicilien pour les Mutilés de *Palermo* égale l'école de Milan pour sa préparation et son organisation : elle la surpasse même pour son fonctionnement qui est moins récent, et qui lui a permis de profiter de l'expérience acquise.

A Villa Helg, à San Lorenzo in Colli, près de Palerme où se trouvent les ateliers remarquables de l'Institut de rééducation,

un vaste terrain presque inculte fut transformé miraculeusement en un champ d'expériences où toutes les plus communes cultures horticoles et rurales ont trouvé et trouvent encore une application profitable. A ce terrain on en a récemment adjoind un autre d'environ 10 hectares qui se trouve en plein travail et dans lequel on cultivera les primeurs pour l'exportation. Il contiendra également un verger—On y fera la culture intensive du froment, des légumes et des tubercules comestibles, tous produits si nécessaires dans le moment que nous traversons.

A côté des diverses cultures auxquelles les invalides s'exercent, ou des différentes opérations agricoles proprement dites qu'ils réapprennent, c'est-à-dire de la préparation du terrain à la récolte des produits, à côté de cela donc, se sont installés divers types de petites industries locales, adaptées aux besoins de la région sicilienne.

Il y a ainsi, en développement continu, un vaste rucher pourvu de ruches des types modernes les plus variés (Sartori, Dadaut, Blatt, Tonelli, Morale, etc.).

Une installation pour l'élevage des poulets, vraiment admirable, construite suivant les avis les plus rationnels, contient plus de deux cents poulets.

La Section compte également une dépendance spéciale pour l'élevage du lapin qui produit les meilleurs échantillons des races les plus perfectionnées.

Il y a outre un atelier pour la fabrication des paniers où travaillent, comme ouvriers fixes, un grand nombre de mutilés logés et d'autres viennent s'y exercer petit à petit pendant quelques heures par jour pour apprendre un métier secondaire.

A part cela, les invalides qui ont prouvé leur aptitude particulière, ou dont l'état physique le permet, suivent un cours pratique de montage et démontage des machines et des moteurs agricoles à l'Institut Public Zootechnique de Palerme, et apprennent également à conduire ces machines. Enfin sont installés, et en plein fonctionnement, une fromagerie, une porcherie, une étable, un laboratoire pour la fabrication des conserves alimentaires et un petit atelier pour la réparation des machines agricoles.

La Direction technique de cet établissement est confiée à un licencié en sciences agricoles, qui a déjà occupé d'importantes places dans l'enseignement et dans la propagande agricole : le Docteur Angelo Aliotta. Il est assisté d'un aide-comptable—qui a fait des études officielles de viticulture et d'oenologie—et par un vétérinaire qui a la charge de consultant zootechnique, enfin par les différents chefs des ateliers et des sections agricoles.

L'enseignement que l'on donne dans cette école de Palerme est presque exclusivement pratique. Ceci pourrait nous paraître un défaut si nous ne considérons que—étant donné le niveau, encore primitif, de culture de cette région insulaire de notre pays—c'est déjà un résultat merveilleux que celui que l'on

obtient, par une méthode tangible et probante, en détachant l'esprit de ces travailleurs des usages arriérés et des habitudes irrationnelles qui rendent stériles leurs méthodes de culture.

Ainsi cet Institut, qui a déjà rendu à la terre environ 200 invalides et qui entre actuellement dans une période de développement plus actif, apporte une contribution de premier ordre à la rééducation rurale de notre pays.

L'Etablissement de *Pescia* organisé par les soins de la Croix-Rouge Italienne offre le type d'un Institut complet pour l'assistance aux mutilés, avec ses installations médicales et d'entraînement, avec son atelier orthopédique et de prothèses, avec ses laboratoires professionnels, destinés exclusivement à la rééducation agricole.

Créé durant les premiers temps de la guerre, quand encore aucune disposition législative ne réglait l'accueil des invalides dans ces établissements, l'hôpital de *Pescia* aurait dû, selon l'intention des membres dirigeants, pourvoir un traitement complet des mutilés durant tout le temps de leur assistance, depuis le premier moment de la lésion soufferte, jusqu'au plus éloigné du rétablissement physique et professionnel.

Dans ce but, et dans l'installation et dans l'organisation de l'Institut on avait pourvu, d'une manière modeste mais efficace aux quatre périodes principales de leur traitement, c'est-à-dire : chirurgique, physiothérapique, d'entraînement fonctionnel, orthopédique et de prothèses, de rééducation professionnelle. Les organisateurs de l'Hôpital avaient en effet pensé que, dans la pratique, ces diverses périodes ne sont pas séparables, mais qu'elles s'alternent, qu'elles se substituent et se superposent l'une à l'autre pendant le cours du traitement, suivant les conditions particulières de chaque individu.

Mais, vu que la loi se montra non conforme à de tels projets et divisa nettement les diverses périodes de traitement des mutilés, l'hôpital de *Pescia* créa la Maison de Rééducation professionnelle générique, conservant toutefois intactes ses installations sanitaires et ses moyens techniques.

L'Institut avait pourtant toujours eu l'intention, dès le début de son activité, de se spécialiser dans la Rééducation agricole, guidé dans cela, non seulement par l'idée fondamentale de rendre à la campagne le plus grand nombre possible d'invalides de guerre auparavant agriculteurs, mais aussi par le milieu essentiellement agricole de la région et par l'heureux avantage de l'existence dans cette même ville, d'une des plus florissantes écoles pratiques d'agriculture de tout le Royaume.

A cet effet, d'accord avec cette école l'Institut de *Pescia*, tout à fait le premier parmi les autres Instituts semblables, eut une Section pour l'enseignement de l'agriculture et des métiers analogues. Mais il ne suffisait pas aux organisateurs de conserver une seule section professionnelle pour l'instruction rurale, ils voulurent procéder à la spécialisation exclusive et complète de

l'Etablissement dans la rééducation agricole, et, précisément dans ces dernières semaines, grâce à l'abondance des moyens mis à sa disposition par la Croix-Rouge Italienne, l'organisation a été complétée et l'école a commencé à fonctionner.

L'Etablissement de Pescia, qui dispose actuellement de 170 places possède outre les installations techniques dont nous avons parlé, les terrains nécessaires à l'enseignement pratique des travaux des champs. Une spacieuse propriété faite de plaines et de collines présente les types les plus communs de culture : culture des céréales, de la vigne, des oliviers. Un jardin vaste et très bien travaillé est utilisé pour la production des cultures horticoles qui sont une spécialité de la Région. Un très grand champ situé près de l'Institut permet l'emploi des machines agricoles qui sont fournies par l'école d'agriculture de la ville. Enfin le jardin, riche et spacieux de la Villa Calderai, où se trouve la direction et l'hôpital pour les mutilés, sert à l'enseignement pratique de la floriculture.

Dans un grand édifice à trois étages, construit à cet effet par la générosité du propriétaire de la Villa, Mr. Calderai, se trouvent les dortoirs, les Ecoles et les laboratoires pour les industries agricoles.

Une autre petite construction abrite la Direction de l'entreprise agricole, les réserves de graines et les instruments de travail. Enfin viennent les étables pour les vaches, la laiterie, les porcheries, la garenne, le poulailler, le rucher, tous d'installation récente.

L'organisation de l'établissement est faite de manière à pourvoir à l'enseignement théorique et pratique de l'agriculture en général, des industries agricoles et des petits métiers de la campagne. Il y a ainsi diverses sections d'enseignement : cultures herbacées, cultures des arbres fruitiers (fructiculture), horticulture, jardinage, élevage des animaux ; puis œnologie, huilerie, laiterie, et enfin cordonnerie, fabrication des sabots, travail des sièges et des meubles de la campagne, travail de la paille et de l'osier, construction des fûts et des barriques pour le vin, réparation et construction des chariots et des charrues nécessaires aux travaux agricoles.

La Direction de l'Ecole est confiée à un professeur de sciences agricoles, assisté—en ce qui concerne la surveillance et l'enseignement pratique des diverses métiers—par d'autres chefs-experts et chefs de métiers. Cependant tout le fonctionnement de l'Institut est soumis à la Direction de l'Ecole Publique d'Agriculture de Pescia, qui met à la disposition de l'Etablissement des professeurs pour les sections et tout son riche matériel de travail.

L'enseignement théorique, à part l'école élémentaire obligatoire—qui constitue la base de l'instruction pour tous les invalides recueillis—consiste en conférences populaires, trois fois par semaine, faites par le directeur de l'Ecole et les divers professeurs de l'Institut Public d'Agriculture, et illustrées de démonstrations

pratiques par des expériences, des modèles, des tableaux et des plans.

Pour les plus cultivés et les plus intelligents, on a constitué un cours d'économie agricole—comptabilité et technique rurale qui destine les élèves aux emplois d'administrateur, d'agent de campagne, de surveillant agriculteur.

Comme on le voit, d'après tout ce que nous avons décrit, l'école de Pescia—comme les deux précédentes—pourvoit complètement et d'une manière rationnelle à la rééducation agricole des invalides de guerre en Italie.

Parmi les Instituts du troisième groupe, c'est-à-dire ceux qui sont indépendants ou annexés à des Ecoles d'agriculture, pré-existantes, la plus grande partie en a été créée depuis peu et par suite n'a pas encore atteint tout son développement. Il faut cependant excepter Turin et Pérouse.

Le Comité piémontais pour l'assistance des mutilés s'est dès le début occupé de la rééducation de ses agriculteurs invalides, en les faisant entrer dans une école professionnelle de protection qui existait déjà au Château de Lucento près de *Turin* : l'Institut Bonafous.

Cet Etablissement est une Colonie Agricole qui abrite pour l'apprentissage des travaux des champs, les jeunes gens dépourvus d'appui moral et matériel suffisant. Il dispose d'une propriété d'environ 70 hectares avec des jardins, des potagers, des vergers et des pépinières. Il possède des près irrigués et des champs où se fait une bonne éducation agricole. Un Institut Zootechnique du Gouvernement contenant une pépinière forestière, en fait partie. Parmi les diverses cultures qu'on y pratique, très importante est celle du tabac qui est perfectionnée dans les soins de la plante elle-même jusqu'à la mise en tonneau. On y élève des bœufs pour la boucherie, des vaches pour le lait, des porcs et des lapins.

Dans cet Institut se trouvent aussi des ateliers de charron, de menuisier, de forgeron, de maréchal-ferrant.

L'Etablissement possède de nombreuses machines modernes pour la culture agricole.

Les invalides, sous la direction des professeurs et du personnel technique attaché à l'école, assistent et prennent part aux divers travaux que l'on accomplit dans la grande culture comme dans les cultures particulières et dans l'élevage du bétail.

Les invalides sont exercés également à la construction des corbeilles, à la fabrication des sabots, à la réparation des machines agricoles et des chariots.

L'enseignement est essentiellement théorico-pratique. Les leçons théoriques sont des explications des travaux accomplis dans la journée, des constatations et des observations que petit à petit les professeurs et les élèves sont amenés à faire.

Cette école fonctionne comme nous l'avons déjà dit, depuis plus d'un an, mais elle a été et est encore peu fréquentée. Durant l'année dernière quatre élèves se sont inscrits et actuellement il y en a seulement six.

L'Ecole de rééducation pour les mutilés de guerre agriculteurs a *Pérouse* fondée à la fin de 1916 sur l'initiative d'un Comité Provincial et grâce à l'attention particulière du Sénateur Faina, est située dans les locaux de la Fondation pour l'instruction agricole. Elle a été organisée par les soins de cette Fondation même et de l'Institut Public Supérieur Agricole de *Pérouse*.

Un Comité local est chargé de la surveillance de l'Etablissement et le fonctionnement est confié à un personnel technique sous la direction du prof. Vivenza de l'Institut supérieur d'agriculture. Il y a également un personnel médical pour l'assistance sanitaire et la direction des applications orthopédiques qui se font dans cet Institut en un petit atelier de prothèses établi pour le montage des appareils.

L'instruction qui dure un trimestre au minimum et un semestre au maximum comprend : l'Instruction élémentaire, l'Instruction complémentaire, l'Instruction professionnelle.

L'enseignement complémentaire comprend les notions élémentaires de sciences physiques, chimiques et naturelles, les plus utiles aux agriculteurs, appliquées suivant la méthode expérimentale.

L'enseignement professionnel se fait par des conférences illustrées et des exercices pratiques dont le matériel nécessaire est au besoin fourni par l'Institut agricole supérieur, par l'Etablissement ambulant d'agriculture et par la Fondation pour l'Instruction agricole et les terrains annexes.

Les cours théorico-pratiques, qui sont faits sous cette forme, traitent des sujets suivants : Cultures des champs, élevage du bétail, horticulture et fructiculture, viticulture et oenotechnique, culture des oliviers et huilerie, culture du murier et élevage des vers à soie, organisation des terrains.

Les invalides sont également exercés à l'emploi des machines agricoles (y compris l'aptitude à conduire les chaudières à vapeur et les moteurs à explosion pour les travaux des champs) et à la pratique des petites industries rurales et forestières.

L'Ecole qui fonctionne, comme nous l'avons dit, depuis la fin de 1916 et qui dispose de 50 places a, pour de nombreuses raisons, fonctionné jusqu'à présent incomplètement et par intervalles. Tout à présent, elle semble vouloir reprendre l'activité qu'elle peut fournir.

La fondation de l'oeuvre d'assistance pour la rééducation agricole professionnelle des invalides de guerre de *Voghera* date, de très peu de temps ; cette école fut en effet créée à la fin de juillet 1917 et n'a commencé à fonctionner que le 20 août de cette même année. Elle fut instituée par l'Institut agricole

catholique de Voghera par ses propres moyens et avec le concours de Sociétés publiques et privées. Elle fonctionne comme association indépendante suivant les règlements établis par un Statut dûment approuvé.

L'Institut de Rééducation a son centre près de l'Ecole Publique d'Agriculture supérieure " C. Gallini," qui, avec le consentement du Ministère de l'agriculture, a mis à la disposition de l'Institut les terrains, les installations agricoles et le matériel d'étude et de travail.

La Direction de l'Ecole et l'enseignement sont confiés au personnel technique de l'Ecole de l'Etat.

On y a adjoint une Direction Sanitaire pour l'assistance médicale et orthopédique des invalides.

L'enseignement agricole qu'on y donne est théorico-pratique. L'enseignement théorique se fait au moyen de leçons élémentaires. L'enseignement pratique a lieu dans la propriété de l'école et dans les installations annexes.

Les mutilés—étant tenu compte de leurs aptitudes spéciales—apprennent tous les travaux de culture de la propriété, c'est-à-dire : agriculture générale (culture des champs, fructiculture, viticulture, jardinage, culture du mûrier) ; industries spéciales (élevage du bétail et des bêtes à lait, élevage des vers à soie) ; enfin service et manutention des machines agricoles.

L'Etablissement est en train d'installer un vaste jardin de rapport et elle donnera des cours temporaires pour le travail du lait.

Outre ces divers enseignements agricoles il y a aussi des cours d'instruction élémentaire.

L'Ecole a eu jusqu'à présent une vingtaine d'élèves et actuellement elle en a 9.

Il s'agit, comme on le voit, d'une première période d'expérimentation qui, nous l'espérons, sera suivie d'une période de plus complet et de plus fécond développement.

Au sujet des deux dernières écoles pour la rééducation agricole des mutilés dont nous avons annoncé l'ouverture, nous n'avons que peu d'informations.

Celle de *Lecce* Instituée dans la Villa " Sans Souci " par les soins du Comité Provincial d'Assistance Civile, semble avoir déjà commencé à fonctionner avec 13 élèves. D'après le peu que nous savons, c'est un Institut fondé sur le type de ceux de Voghera et de Pérouse déjà décrits et qui dépend d'une Institution Professionnelle Agricole pré-existante dans cette ville.

L'Ecole d'*Ancône* organisée par les soins du Comité Régional Marchigiano pour les soldats mutilés n'a pas encore fonctionné jusqu'à présent.

L'Institut est situé à Porto-Recanati dans une propriété d'environ 40 hectares en grande partie faite de plaines et de demi-plaines et le reste de collines.

Il y aura une direction technique constituée par un Directeur agriculteur-mécanicien, un chef de travail, un chef d'atelier pour l'emploi des machines agricoles, enfin des professeurs experts qui seront fournis par les sections ambulantes d'agriculture d'Ancône et de Macerata.

Les cours professionnels de caractère théorico-pratique comprendront l'agriculture en général, horticulture et fructiculture; élevage des animaux; travaux secondaires d'agriculture; conservation des fruits et fabrication des conserves. De plus l'on donnera—et c'est une très bonne idée—un développement particulier à l'étude des machines agricoles.

L'école peut contenir actuellement 30 invalides et l'on veut porter ce nombre à 50, le plus tôt possible.

Au sujet de cette description sommaire que nous venons de faire, des Sections et des Écoles professionnelles agricoles pour mutilés, nous pouvons nous permettre de faire quelques remarques.

Parmi les trois catégories dans lesquelles j'ai cru pouvoir grouper ces divers Instituts de Rééducation, la deuxième apparaît comme bien supérieure aux deux autres.

Est-ce là un simple hasard, ou cette supériorité ne correspond-elle pas à une meilleure conception initiale ou à une plus logique et plus rationnelle direction dans l'organisation de ces écoles? C'est du moins ce que je pense.

Les Sections agricoles instituées près des maisons principales de rééducation et qui constituent une simple section professionnelle, comme celles du premier groupe, sont peut-être les moins aptes à donner un résultat satisfaisant. Dans ces Instituts (et j'eus déjà l'occasion de le dire) la section agricole reste presque toujours la plus négligée parmi tous les autres enseignements.

L'incompétence des membres dirigeants, l'insuffisance des moyens techniques et pratiques d'instruction, la faible activité des travaux agricoles, là où les écoles de métier bien organisées et plus fréquentées promettent une plus grande nouveauté et une plus grande variété de travail avec la perspective de trouver plus tard un emploi rémunérateur (tout le monde connaît la tendance qu'ont les paysans à désertir la terre pour l'atelier) portent presque fatalement les professeurs et les élèves à se méfier et à défier d'un tel genre d'enseignement. Tant il est vrai que, ordinairement, ceux qui se dédient à l'agriculture sont seulement les invalides qui, ou par suite de leurs qualités intellectuelles, ou par suite de leur affaiblissement organique ou de leur non-chalance habituelle, sont incapables d'exercer un autre métier quelqu'il soit.

Pour cette raison ces sections agricoles ont peu de valeur et peuvent servir tout au plus, si elles sont bien surveillées et bien disciplinées, comme moyen excellent d'entraînement, de rééducation fonctionnel et de préparation aux écoles de rééducation proprement dites.

Plus importants, sans aucun doute, sont les Instituts du troisième groupe, c'est-à-dire ceux indépendants qui ont été créés dans un but essentiellement agricole et qui, pour le plus grand nombre, sont confiés à une Ecole d'instruction agricole du gouvernement. Car, en effet, dans ces établissements la partie professionnelle correspond à toutes les exigences d'un enseignement efficace, grâce à la compétence des membres dirigeants et à la richesse des moyens. Mais, je l'ai déjà dit précédemment, rééduquer à l'agriculture ne veut pas dire enseigner l'agriculture. Il ne faut pas oublier que nous avons à faire à des infirmes, à des affaiblis physiquement, à des individus déformés, moralement et physiquement anormaux et que, par suite, le problème de leur rééducation professionnelle est en même temps médical et éducatif.

Dans les discussions longues et animées qui eurent lieu à Paris à la Conférence interalliée pour les invalides de guerre, au mois de Mai de l'an passé, on a plusieurs fois affirmé (et on l'a approuvé dans les conclusions) que la Direction de ces Maisons de Rééducation doit être avant tout médicale, tout en conservant, bien entendu, le concours des experts compétents. De plus, que les écoles de travail doivent être situées près d'hôpitaux ou d'Instituts médicaux afin que les soins chirurgicaux et physiothérapiques aient lieu en même temps que l'enseignement professionnel.

La Direction Sanitaire de l'Ecole a, indépendamment des soins éventuels médicaux et chirurgicaux, un devoir très important à accomplir, en ce qui concerne l'application au travail de ces élèves invalides.

L'examen minutieux de l'impuissance qui les a atteints, le siège et la réduction des diverses activités motrices, l'application des soins physiques et mécaniques aptes à augmenter, à rétablir et à coordonner les diverses puissances de travail (entraînement et rééducation organique) sont en effet de la compétence exclusive de la Commission sanitaire. De même d'ailleurs que l'utilisation des appareils orthopédiques et de prothèses capables de corriger et de remplacer les parties atrophiées ou absentes (soins prothétiques et orthopédiques); l'étude des moyens mécaniques plus efficaces pour rendre l'invalidé apte à l'exercice des différents travaux (prothèses de travail); l'étude et la désignation des genres de travaux que permet l'affaiblissement organique de l'individu (orientation professionnelle); et enfin la surveillance des effets produits par le travail (considéré comme agent physique) sur l'organisme en général et sur la partie malade en particulier.

L'œuvre des maîtres professionnels commence et s'explique seulement après tous ces soins.

Et c'est précisément l'absence complète d'organisation technico-sanitaire des écoles autonomes d'agriculture qui,—contrastant avec les principes fondamentaux d'une rééducation rationnelle—rend stérile l'action de ces instituts, en entrave le fonctionnement et, par cela même, en diminue l'utilité.

Au contraire les instituts que j'ai classés dans le deuxième groupe, répondent très bien à ces idées fondamentales, et c'est là, à mon avis, la raison pour laquelle ils se sont développés plus vigoureusement et qu'ils accomplissent une action plus complète et plus efficace.

Détachés de la complexité des sections professionnelles et rendus autonomes seulement en ce qui concerne la partie instructive (comme les écoles agricoles de Milan et de Palerme) ou résultant de transformations de la Maison principale de Rééducation (comme l'école de Pescia), ces Instituts maintiennent intacts les cours scientifiques, de même que les rapports techniques et la direction sanitaire spéciale à ces Etablissements, que nous avons voulu appeler " Ecoles de Rééducation professionnelle " et dont Palerme et Milan sont le plus parfait exemple.

Il y a dans ces Instituts un tout organique, fonctionnant avec harmonie, dans lequel l'assistance aux invalides est rendue complète par le juste équilibre entre le but, les moyens et les compétences qui y concourent.

Et c'est ce type d'institution qui, à mon avis, devra être conseillé et répandu, en en organisant l'installation ou en en favorisant le développement près de plus grands centres de Rééducation comme Bologne, Florence, Rome, Naples où ne manquent ni la richesse des moyens, ni l'activité de personnes dévouées qui permettront de faire naître et de développer vigoureusement d'aussi importantes oeuvres de prévoyance sociale.

Il nous reste à examiner le contenu du programme professionnel que nos écoles agricoles de Rééducation se proposent de suivre en Italie.

D'après ce que j'ai exposé précédemment en ce qui concerne les divers instituts, nous pouvons remarquer que le caractère et la matière de l'enseignement est à peu près semblable dans chacun d'eux. Chez tous, l'instruction théorico-pratique prédomine et cela tient à une juste idée de ne pas seulement réadapter au travail matériel l'organisme des mutilés, mais aussi d'élever la culture professionnelle pour compenser l'affaiblissement souffert.

L'exercice de la culture et du travail des champs qui est fait dans toutes ces écoles a davantage une valeur d'instruction et d'expérimentation des méthodes de culture plus rationnels, que de véritable exercice physique rééducateur, car il est en effet évident, que cette partie de l'agriculture plus matérielle et plus fatigante trouvera l'organisme de nos invalides moins apte à l'exercer.

Au contraire, l'enseignement de la fructiculture qui est donné dans plusieurs de nos écoles, apparraît plus profitable ; mais il demande aussi des aptitudes physiques que n'auront pas les mutilés, spécialement ceux de métiers inférieurs.

Ce fait ne se produit pas dans les écoles d'horticulture et de jardinage dont parlent les programmes des divers Instituts et que nous voudrions voir dirigées avec une intention vraiment sérieuse et un but enfin professionnel. Malheureusement, nos établissements de rééducation restent encore bien superficiels et n'ont qu'un développement très modeste.

Ces branches secondaires de l'agriculture, peu fatigantes et non très difficiles à apprendre, peuvent être presque toutes exercées par les invalides. De plus, elles leur offrent un emploi sûr et un bénéfice appréciable, étant donné l'absence relative de cultures horticoles dans de nombreuses régions de l'Italie et l'application plus rare encore que la floriculture rationnelle a trouvée jusqu'à présent dans notre pays.

Nous pourrions dire de même de l'enseignement pour l'emploi des machines agricoles et de la motoculture dont l'utilisation, peu répandue chez nous, porte un préjudice considérable à toute la production agricole nationale.

Et puisque l'expérience faite dans les écoles de France, a démontré la possibilité et la facilité relative d'adaptation des invalides à ce genre de travaux, il est à souhaiter qu'un tel enseignement—qui est donné aujourd'hui dans quelques écoles seulement—se répande et se développe chaque jour davantage dans nos Instituts de Rééducation.

A ce propos nous attendons beaucoup de l'ouverture de l'Ecole d'Ancône qui se propose précisément de donner un développement particulier aux applications de la mécanique agricole.

Parmi les diverses industries agricoles, une de plus répandues est certainement celle de la production du lait et de la fabrication de laitages auxquelles tous nos établissements agricoles professionnels ont songé en installant une petite fruitière. Mais sur ce point il s'agit de s'entendre : Croit-on que pour enseigner la tenue du bétail et l'utilisation du lait avec de si modestes expériences, quelques ustensiles indispensables et une ou deux vaches dans une étable puissent suffire ? Si l'on veut donner un enseignement véritablement profitable dans ces sections que l'on a pompeusement appelées "écoles pour l'industrie laitière," aucun de nos Instituts n'a jusqu'à présent des moyens et des installations adaptés à ce but.

Il serait pourtant important et très utile d'exercer à cette industrie une partie de nos mutilés agriculteurs, choisis parmi les plus travailleurs et les plus entreprenants, afin d'en faire de bons et habiles ouvriers qui trouveraient par la suite un bon emploi dans les nombreux établissements de l'Italie septentrionale et méridionale où la fabrication du beurre et du fromage est si répandue et si florissante.

La tenue et l'élevage des animaux de basse-cour comme l'agriculture que l'on enseigne dans toutes nos écoles, même dans celles de faible importance (et il est facile de le comprendre vu la simplicité des installations) doivent être considérés comme des moyens d'instruction complémentaire des exercices agricoles et non comme un apprentissage professionnel exclusif. Ils devront constituer un métier seulement pour les mutilés qui ne pouvant s'employer dans d'autres branches agricoles trouveront par ce moyen et sans fatigue une modeste source de gain lorsqu'il retourneront dans leurs familles.

Il en est de même pour tous les petits métiers de la campagne : sabotier, vannier, tonnelier, fabricant de chaises, &c., qui (étant considérés, là aussi, les cas particuliers) doivent constituer un enseignement complémentaire des diverses branches de l'agriculture générale.

Et j'ai vu avec satisfaction comment plusieurs de nos Instituts, ceux de Milan, Pescia, Palerme, suivent précisément ce que je conseille dans l'orientation professionnelle des invalides qu'ils accueillent.

L'enseignement pratique de la recolte et de la conservation des fruits et de la fabrication de conserves alimentaires, qui est fait à Turin, Pérouse et Palerme, est une très bonne chose sous tous les rapports. Ses industries prennent en effet chez nous un développement toujours croissant et les invalides pourront s'y dédier avec grand profit après la guerre, car il s'agit de travaux simples, peu fatigants et vite appris, tant il est vrai que généralement les femmes et les enfants y sont employés en Italie.

C'est également très bien de la part de l'Ecole de Pérouse de songer à faire apprendre aux invalides le métier de garde-forestier et de garde-champêtre. En effet, pour ceux dont les conditions physiques le permettent (les mutilés et les estropiés de bras) l'exercice d'un tel emploi—facilité par le prestige dont indubitablement nos glorieux blessés jouiront après la guerre—sera très avantageux soit dans les entreprises privées soit dans celles de l'Etat.

Après avoir ainsi exposé sommairement l'origine et le développement de nos institutions pour l'assistance professionnelle des mutilés agriculteurs, après en avoir décrit les différents types et marqué les caractères, analysé le fonctionnement, mis en relief les qualités et les défauts, après cela dis-je, il peut être utile de jeter un regard d'ensemble sur toute cette œuvre développée en Italie dans le champ de la rééducation agricole, de l'apprécier aussi justement que possible et d'en tirer d'exactes conclusions.

Si nous examinons cette œuvre, une chose apparaît évidente et incontestable : l'effort intense et remarquable que notre pays a fourni pour affronter lui aussi, le problème de l'assistance professionnelle. Effort d'autant plus louable qu'il s'est manifesté et qu'il s'est développé par des initiatives privées, sans aucune aide, ni encouragement, ni appui de la part de l'Etat et qui

prouve combien nous avons compris l'importance de la question et la nécessité de l'affronter et de la résoudre.

Toutfois les difficultés matérielles auxquelles se sont heurtées dès le début ces initiatives privées, leur insuffisante préparation, l'absence de toute direction initiale et de coordination, ne pouvait apporter, comme elle l'a fait d'ailleurs, qu'un grave obstacle et un relâchement dans cette œuvre de rééducation.

Et aujourd'hui, après deux ans et demi de guerre, la part qu'apporte l'Italie à la solution de ce problème est encore bien modeste, et nous sommes loin d'avoir obtenu les résultats que, vu nos efforts, nous étions en droit d'attendre.

Car, si nos institutions professionnelles semblent après mille tâtonnements avoir trouvé leur orientation pratique et leur direction rationnelle (comme on l'a vu du moins pour plusieurs d'entre elles qui pourront servir d'exemple à celle déjà créées ou qui se créeront) le nombre de ces institutions et leur efficacité sont tels qu'elles ne peuvent constituer les bases sérieuses d'une œuvre rééducatrice pour nos mutilés agriculteurs.

• Mais un autre fait que nous devons relever augmente encore l'insuffisance de nos organisations :

Avec une douzaine environ d'annexes, de sections et d'écoles professionnelles agricoles dont plusieurs fonctionnent depuis presque deux ans, en ayant environ 600 places à la disposition de nos invalides, il n'y a plus de quelques dizaines de mutilés qui ont accompli ou sont en train d'accomplir leur rééducation agricole.

De quoi cela provient-il ?

D'un fait qui apparaît immédiatement si nous examinons la fréquentation de nos Instituts : en effet l'Ecole de Voghera dispose de 50 places et elle compte actuellement 9 élèves ; Turin, avec 50 places également, en compte 6 ; Pérouse, avec 70 places, en hospitalise 31 ; Pescia, avec 170, en a 60 ; Lecce, avec 50, en a 13 ; Palerme, avec 100 places, en a 30, et ainsi de suite.

Donc, nos Ecoles de Rééducation agricole non seulement sont rares, mais encore elles sont pour la plupart désertes.

Si nous examinons les causes de ce phénomène—elles sont multiples et je me dispense de les énumérer—il en est une qui me semble la plus importante et que l'on doit sérieusement étudier : c'est que le recrutement des mutilés agriculteurs, pour les sections et les écoles d'agriculture, est fait dans les Instituts mêmes de rééducation professionnelle et est laissé au bon vouloir des Directeurs de ces établissements et des élèves qui y sont recueillis.

Or, si l'on tient compte de ce que les invalides arrivent dans ces Instituts, après un long séjour dans divers hôpitaux, las et peu portés au travail ; qu'un nouveau séjour, si court soit-il, dans ces établissements, les rend toujours plus incapables de s'occuper ;

que d'autre part, l'entraînement de leurs camarades aux nouveaux et apparemment plus profitables enseignements techniques ou industriels les attire invinciblement ; que les membres dirigeants de ces Instituts, heureux, par un égoïsme excusable, de voir leurs laboratoires et leurs ateliers fréquentés et florissants, ne s'opposent pas à cet entraînement des mutilés, il est facile de voir les inconvénients de ce recrutement qui réfrène et arrête encore les tendances naturelles de nos agriculteurs à retourner à la campagne.

Et comment peut-on remédier à cela ?

D'après ce que nous voyons de nos Institutions de Rééducation professionnelle pour les invalides de guerre, l'œuvre venue de l'initiative privée est maintenant dans une période de perfectionnement tel qu'elle peut continuer désormais à se développer et à se perfectionner par ses propres moyens.

Je ne demande donc pas aux associations gouvernementales et à l'Oeuvre Nationale, qui les représente, des subventions matérielles pour nos travailleurs de la terre mutilés.

La sollicitude et la charité publique est si grande qu'elle pourvaiera comme elle a pourvu jusqu'à présent aux besoins de cette pieuse assistance.

Et il ne leur demande pas davantage, Dieu m'en garde, des lois ou des règlements à ce sujet.

Mais ce que je demande, et que je désire voir établi comme principe officiel et fondamental, c'est que tous les mutilés agriculteurs soient rendus à la terre, à travers les écoles de rééducation professionnelle agricole et que pour cela les invalides soient envoyés dans ces écoles, directement par les sections de concentration, à peine leurs conditions physiques le permettront.

Si à ma proposition on objectait que nos écoles sont actuellement trop rares et trop faibles pour accueillir tous nos invalides de la campagne, je répondrais que, sous l'impulsion du besoin et encouragées par la certitude que l'Etat a confiance en elles, de nouvelles énergies se lèveraient, de nouvelles générosités se feraient jour ; et le pays, qui a désormais senti toute la beauté et l'importance de cette rédemption morale et matérielle de nos paysans invalides, saura encore une fois faire son devoir.

OUTLINE OF A SCHEME FOR TRAINING AND EMPLOYMENT OF DISCHARGED AND DISABLED MEN OF HIS MAJESTY'S FORCES.

By KENNETH S. DICKINSON, F.C.S., M.P.S. ;

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In any scheme which may be outlined for helping Sailors and Soldiers, disabled in the present war, or discharged from His Majesty's Forces at the close of it, there must always be kept before the eyes of those who examine it the varying mental capacities of the men concerned. In pre-war days, the Army standard of education was not a particularly high one, whereas the men of the present day Forces are culled from every imaginable grade, from labourers and navvies to University graduates and professional men in the highest walks of life. Obviously, therefore, any scheme of training or of assistance to such men of the present day Army must be of a very elastic nature if it is to be of any use to more than one grade of the men who will, now or later, require assistance.

A second very material consideration, too, is as to the ultimate value to the Nation of any scheme which may present certain immediate benefits, since it would be obviously unwise to spend labour, time and money in the training of men in subjects for which there would later be little or no demand, or where the final value of their work depended upon contingencies which could not be foreseen. There would be too grave a risk of periods of trade depression, and consequently of some hundreds, or even thousands, of ex-Service men finding themselves without means of sustenance. Finally, this would mean, of course, that the country, which had spent a certain—and considerable—sum of money on the training of these men would have to come to the rescue and disburse still further sums to them as, and when, the need arose.

Some twenty years ago, the question of "Small Holdings" was much to the front, and many reasons why men should be induced to return to the land were brought forward. The policy was not blessed with any great measure of success at that time, owing, mainly, to the difficulty experienced in obtaining suitable land at a reasonable figure. In cases—isolated, it is true—where men were allowed a few acres of land at a fair rental, they almost invariably acquired in the course of a few years a very comfortable little homestead.

It is in an elaboration of that scheme and that policy that the writer can foresee a great possibility for the making of useful "Citizens" of men to whom the country owes so much. The subject needs a close examination from at least four points of view, namely :—

- (1) The scope and functions of the scheme proposed.
- (2) The aggregate value of such men doing such work to the State.
- (3) The feasibility of training and employing a large number of men in such work.
- (4) The possibility of making such a scheme a prosperous, self-supporting organisation in the fulness of time.

To take these view-points in order :—

Firstly : what, in as clear and explicit a manner as possible, is this proposed Small-holdings scheme?

It must be stated at the outset, in reply to this, that at such a stage little more than a hazy outline can be attempted. The co-operation of existing societies and associations, the finding of suitable organisers, the decisions respecting districts chosen for a trial of the scheme, all would affect to a certain degree the scope of the scheme proposed. But, in general, it is to offer to those men who want it, and are qualified to receive it, training in the most scientific and up-to-date methods of working a small-holding of, say, from one-and-a-half to three acres in extent. The training of these men could be of three or six months' duration, in which time they might learn something of the drying of fruit, vegetables and drugs; of the management of bees and rabbits for profit; of intensive horticulture and of the best methods of marketing their produce.

There already exists in this country an organisation which, with a very little adaptation, could be made to serve admirably both for the instruction of such men in such subjects and—an even more important consideration—as a medium whereby the men could later keep in touch with the best markets. I refer to the "National Herb-Growing Association" and the "National Herb-Growing Industry, Ltd." The former is more of an educational body, the latter acts in the nature of an agent, accepting vegetable products—chiefly, at present, medicinal herbs—from its members, selling them in bulk quantities to wholesalers, manufacturing chemists and the like, and forwarding the proceeds to its members again. Some men, who were started with a little land, would conceivably wish to be free from the trammels of any "Association." It should be left perfectly open to every man to regard himself as a free agent, and it would be found that, in a vast majority of cases, the men who decided to work entirely on their own initiative would soon develop original ideas, both as to the produce they should grow and the finding of a market for it later.

Other men, of a less self-reliant type, would prefer to continue to hold their land as workers for a Central Agency. The "National Herb-Growing Industry" would stand to them in

the place of a "Head," and could easily be adapted to issue instructions as to what to grow, how to grow it, and how to deal with the produce afterwards. At the present moment, the production of medicinal plants is probably the most remunerative branch of the work; it is, however, more than likely that it would be found advisable later to gradually allow this trade to return to those countries where both land and labour are cheaper than in England; and where the natural, physiographical conditions point to the cheapest production of such herbs, endeavouring, as the scheme matured, to make British ground yield, by intensive culture, the utmost possible result.

There should be appointed a certain number of men, who, for want of a better title, I will call for the moment "*Official Visitors*," and on the capability of these men lies the greater portion of the success or failure of the scheme. These men, appointed and paid by His Majesty's Government, would need to stand in the place of "*Big Brother*" to the men who were placed in their area. Any attempt at "*officialdom*" would hopelessly impair their chance of success. They would need to be men of wide and varied experience; they would need to be able to give advice at one holding as to what best to grow; at the next, as to how best to erect an inexpensive drying apparatus; at a third, to settle a boundary quarrel with a neighbouring tenant; and at a fourth, to advise on the care of bees, or the arrangement of a water supply from a stream near by. The positions would be regarded, and rightly, as positions requiring great tact, ability and perseverance—the measure of the Visitors' success being the increasing number of calls upon his services made by the men of his district. These men must therefore be selected with care, and their emoluments such as would secure the right type of man.

That a successful, commercial proposition is here suggested is open to no doubt whatever, since the thing has actually been done by individuals in pre-war days. There is, for example, a case which may be cited as that of Mr. A. This man, originally a City clerk, commenced bee-farming in a modest way in a tumble-down cottage, with a bare half-acre of ground. To-day his hives, commencing at four, now number seventy, and when all expenses are calculated, they average a net profit of £2 per hive per annum. This, with the odds and ends of foodstuffs he can grow in addition, is sufficient to provide for the needs of himself and his two sisters. Finally—and by no means the least important—there is the testimony of the man himself:—"Getting peace and plenty from half an acre; and as for the girls, they laugh and sing all day long." Within a dozen miles of this little cultivation lies another, similar one; this is run by two single men. It has proved itself a complete success, and these two men are in a fair way to a comfortable, steady income.

Now, if these things can be done in one place, they can be done in another; if one man can make a small-holding a success, another man can—the admittedly varying mentality of the individuals being fully met by some such "*Supervisors*" or "*Visitors*," as outlined above.

This must suffice, then, for a preliminary outline of the scope of the training suggested; it is a scope which may be adapted, modified, extended in an exceedingly wide degree, according to what would seem best on a more close and critical inspection.

The second aspect from which the subject must be approached is as to the ultimate value to the State of such men doing such work. To put the question more succinctly:—"If England sets these men up with individual small-holdings of their own, will England ultimately reap any benefit?" To this there can only be one reply, and that an emphatic affirmative. In the aggregate, the foodstuffs these men would produce would be enormous, and every pound of food grown in the country means a correspondingly less amount to be imported from elsewhere, and a corresponding saving to the country. This fact is a weighty one in time of peace, no less than in time of war; the present food-shortage serves but to emphasise its importance. Take the case of Mr. A., already outlined. Grant, first, that a certain number of ex-Service men have already been trained and set up in like manner, and their bee-farms are each fifty hives strong. Taking one year with another, the hives will average 40 lb. of honey alone per annum—and fifty hives would, therefore, yield some 2,000 lb. of honey alone, which, omitting for the moment the wax obtainable, is a very considerable source of income. Suppose that only 500 men were so trained—a very modest figure—that would mean the sum of one million pounds of honey produced in England, at a pre-war value of some £50,000, and a present day value of quite £125,000. This, be it noted, from one item alone. Honey is imported from Chili, Peru, California, Jamaica in huge quantities; none of it is equal to the English in flavour, nor can it command so high a price; and the consumption of honey is limited solely by the supply. There is a ready market for tremendous quantities of it at the doors of the men who cultivate the industry.

An acre of Belladonna shows to-day a net profit of £80; an acre of Chamomiles yields £75; these and many other drugs, readily cultivated in England, have been habitually purchased from the Central Empires for many years past; they could be a part of the general scheme for the men under discussion.

There is the question, too, to be considered that the land which is divided up into smaller sections, each section worked to the utmost of its yielding power, is obviously of more value to everyone concerned than that same land as a negligible portion of a great estate, or employed simply as pasture land over a great period of time. Such a body of men, doing such work, would materially affect the nature of the country's requirements, and would provide it at the same time with a large quantity of pure, wholesome foodstuffs, with no, or at most a very small cost of transport.

Another aspect of the value of men engaged in this way to the Nation, and one of no small importance, is in the probable stimulus that the healthy, open life would provide to the National

Birth-rate. It is a well-known fact that the average family of a farm-hand is very much larger than that of the city dweller, such as a clerk or shop-keeper, and, the conditions being so much more favourable, the coming generation would be of a better physique, and hence better able to shoulder the immense burdens that will undoubtedly fall to their lot.

If the scheme were adopted, it has already been shown how the men could be trained by a modification of the plan now in force in the "National Herb-Growing Association." Here ladies are accepted for a certain length of time to work at a central drying and sorting depôt, and when proficient are employed at other provincial centres. The commercial part of the work is under the auspices of a daughter society, the "National Herb-Growing Industry, Ltd." These could be incorporated as they stand, on negotiation, in all probability, or their methods followed as the needs of the scheme seemed to permit. (The writer would state here that he speaks of the Association and Industry aforementioned entirely on his own responsibility, and that he has no authority whatever to use their name or to pledge their word for anything they might or might not agree to. He joined their Association in January of this year, in order to gain a first-hand knowledge of their working for the purposes of this paper; beyond that, he does not know anything of their desires or intentions for the future.) There seems no reason whatever to anticipate any difficulty in the training of these men, either in general management of a homestead, or in specific culture, whether that culture be of Bees, Rabbits, Fowls, Garden Produce or Medicinal Herbs.

As to the prospects of making such a scheme a self-supporting one, the question hardly needs asking. If it be asked, the answer lies in the fact that men have tried it, and have made it pay entirely on their own responsibility; surely, then, a State-aided attempt on a larger scale should result in a still greater measure of success. That the men would welcome the offered opportunity is well known; the writer has constantly heard men expressing their determination to "Go on the land" after the war is over, and they are free to do so. If these men cannot find the land they want in this country, they will go abroad for it. Surely it would be to the country's benefit to keep her men at home, and, by helping them at the commencement, and putting them in the way of earning a decent livelihood at the same time, increase the productiveness of their Mother-Country.

Organisation, probably on the profit-sharing lines, so successfully worked by Lord Leverhulme at Port Sunlight, would come as a natural sequence, and the men, properly "nursed," would be cheerful, healthful, useful members of the community.

The scheme is not only a "feasible" one—it is a most necessary one. Contracts have been accepted by the National Herb-Growing Industry for delivery in 1918 of many tons of dried

herbs, amounting in the aggregate to some £12,000, and this before the year's work has well begun; it includes such articles and such quantities as :—

10 tons Horehound.

10 tons Sage.

10 tons Wormwood.

3 tons Lavender.

3 tons Lily of the Valley Roots, &c., &c.

These, as also the aforementioned figures respecting honey and beeswax, prove that there is a market already existent in this country for these things.

The following remarks of Mr. Lloyd George, over eighteen months ago, appear to crystallise the position with regard to national business policy after the war :—

“ I do not think you can have the *status quo ante bellum*. I do not mean to say you will set up a system of tariffs. I do not mean you are going to set up rival commercial federations, which will simply perpetuate the war spirit. What I mean, is this. There are industries which we discovered were essential for self-defence—which Germany had very cunningly and very craftily been building up, I have not the slightest doubt, not with a view to trade, but war. We found ourselves almost done because we had not those industries. We have had to build them up slowly. We have built them up successfully. There are several new businesses essential to war as well as to commerce, which, after building up, it would be a fatal blunder to allow to go down.”

The suggestion made in this paper will, if adopted, go a long way towards restoring in this country a greater measure of economic independence, since their adoption would result in the production upon a greater scale than hitherto of those medicinal and edible products formerly imported from other countries, but which may, after all, be perfectly well produced in this island.

In conclusion, I would say that any scheme of post-war employment for ex-Service men, to be of real merit, must admit of satisfactory answers to these questions, to wit :—

- (1) Will it support the man himself and his family?
- (2) Is it of definite value to the country?
- (3) Is it capable of expansion if successful?

And I would say that the scheme here propounded is amply able to afford to all these questions the very emphatic answer, “ It is.”

EMPLOYMENT.

A Paper Read on Behalf of the Ministry of Labour at the Allied Conference on Disablement.

In the history of Great Britain it is a new event for a very large proportion of the male population of military age to be simultaneously withdrawn from industry, and its corollary that a number, which must at best be very considerable, should return with impaired physical capacity, is equally unprecedented. It has been recognised that provision for ex-Service men should be made on the most liberal scale of which the National finances permit. It must also be recognised that no opportunity should be lost of finding for them, and inducing them to enter, every possible employment which they are still qualified to fill. This is not less necessary from the standpoint of national production. Depleted by the casualties of the war, every suitable trade will require, and should readily absorb, the services of those who, though no longer in enjoyment of unimpaired physique, are still capable of doing their fair share of work and of adapting themselves, with increasing facility as experience increases and in some cases health is gradually regained, to the requirements of civil industry.

The financial relief to be afforded to discharged disabled men is determined by the Pensions Royal Warrant administered by the Ministry of Pensions, and that department is charged by statute with the care of their health, training and employment. In respect of facilitating the return to civil life of sick or wounded soldiers and sailors, the Minister of Pensions has from the first pursued the policy of utilising voluntary local assistance. Local War Pensions Committees have been appointed throughout the country, and with their help systematic schemes for aiding the partial or total recovery of invalids have been put into operation. This is purely a matter for the action of the State working with the best advice it can secure locally. When a certain measure of progress has been made in this direction, the most difficult part of the problem—that of fitting the man, with fairness to all concerned, into his appropriate niche in the industrial organisation—has still to be faced.

In this matter the Ministry of Pensions has sought and obtained the assistance of the Ministry of Labour, and the two Departments have worked throughout in very close co-operation towards a solution. At the outset it was agreed that disabled men who are physically able to re-enter the ranks of ordinary industry should be asked to look to the machinery of the Ministry of Labour for assistance to obtain civil employment. On the other hand, disabled men for whom employment of a more or less abnormal kind, or employment under special conditions would alone be suitable, were to be assisted by the Local War Pensions Committees. It will appear in what follows that arrangements

are now being made to avoid such a sharp demarcation of functions, and to draw together in each locality all the efforts which are being made in relation to the employment of disabled men.

The Employment Department.

It will be convenient, first of all, to describe in general terms the constitution and functions of the Employment Department of the Ministry of Labour. This Department, which was created in 1909 by the Labour Exchanges Act, and transferred in 1917 from the Board of Trade to the Ministry of Labour, is charged with the administration of the Employment Exchanges, numbering some 400, throughout the country, as well as of the work of about 1,100 local agents, who are part-time officers auxiliary to the Exchanges.

Local Advisory Committees.

The work of each Employment Exchange is now supervised by a Local Advisory Committee appointed by the Minister of Labour. Some 250 such committees have been appointed, and are each of them concerned either with a single Exchange or, in the larger towns, with several Exchanges within a compact industrial area. The committees consist of representative employers and workpeople, nominated, as a rule, by the principal associations and trade unions in the district. To these industrial representatives the Minister of Labour may add a number not exceeding one-third of the membership of the committee of "additional" members, being persons who are not connected strictly with industry, but are interested in, and are able to advance, the work of the Exchanges. The Chairman is appointed by the Minister of Labour, who has been fortunate in securing for the position the services of prominent public men in every district. The committees are entrusted with the widest powers of advice and guidance in respect of the Exchanges consistent with the ultimate responsibility of the Department.

The Exchange areas are grouped under nine territorial "divisions," six of which are in England; Wales, Scotland and Ireland form respectively the seventh, eighth and ninth. Employers are invited to notify, and workpeople to seek, vacancies at the Exchange within their district, and in order to meet the fluctuations in the demand for labour and to facilitate its migration, intercommunication between the Exchanges is maintained by means of an official and confidential newspaper, issued weekly with daily supplements, and containing particulars of all vacancies which cannot be filled locally. Such is the system into relation with which the disabled man is invited to bring himself when he is sufficiently recovered to seek an opening in normal industry.

In order to meet some of the special problems arising in the County of London, arrangements have been made for the joint management of two special Employment Exchanges for dis-

charged men by the Employment Department and the Young Men's Christian Association, which had opened an Employment Bureau of its own in April, 1916, and found its special experience of Service men of marked value.

This co-operation, originally quite experimental, has proved so successful that it has been definitely continued.

The Choice of Employment.

It is now possible to indicate the allocation of responsibility for a discharged man's career from the moment of his leaving the Colours to that at which he becomes re-absorbed in industry. On the one side, so far as relates to his immediate relief and his restoration partially or completely to health, he is from the first, as indeed he remains to the end, under the care of the Local War Pensions Committee. This body, with due regard to the man's own choice and the nature of his disability, will suggest an appropriate measure of training, having recourse, if necessary, to the advice of the Local Technical Advisory Committee* in particular cases, and to the instructions relating to Special Trades approved by the Minister of Pensions. It will make provision for the man's maintenance during training. If, however, the released sailor or soldier does not require industrial training, the services of the Employment Department are at once called into operation upon his behalf. Arrangements were made in April, 1915, by which the discharge of all men from the Colours is notified to the Department by the War Office and Admiralty. These notices are transmitted to the Exchange nearest to the place at which the man proposes to reside, and that Exchange will concern itself with him henceforward until he is transferred to any other district. At the Central Office of the Employment Department a special section has been created to deal with the placing of discharged men, and in each of the divisional areas a special officer of the Department is similarly responsible. This officer will be in touch on the one side with the special officer who takes charge of the work at each Exchange, and on the other with the committees or sub-committees concerned with particular cases.

Arrangements have recently been made by which officers of the Department are in attendance at each of the discharge centres in Great Britain on every occasion of the discharge of men, representing in effect a temporary Exchange at each centre. It is the duty of the special officers at the discharge centres to make inquiries of every man whether he desires to enter employment of national importance or otherwise, and to forward the information so obtained, together with details of his disability, to the Exchange nearest his home. This arrangement super-

* These Committees have been formed by the Central Trade Advisory Committees which have been formed by the Ministry of Labour in conjunction with the Ministry of Pensions for a number of industries to prepare schemes of training for disabled men. The principal function of a Local Technical Advisory Committee is to supervise the training of disabled men in their trade and district.

sedes the direct notification of discharges to the Employment Department in so far as men pass out of the forces through the Discharge Centres. Other discharges will, as hitherto, be notified direct to the Department by the War Office, the Admiralty, or shortly by the Air Ministry. On a notification of a man's discharge being received, he is invited to call at the Exchange—his fare for this preliminary interview being paid if he lives more than five miles away or is hindered by his disability. If a visit is impossible, the man is invited to indicate in writing the kind of employment which he desires. If, at the outset, a man is able either to return to his former occupation or to take up some new work under normal conditions, he will be dealt with as an ordinary applicant to the Exchanges. If, on the other hand, his disability appears to be such as to become the first consideration in finding him employment, particulars will be specially noted, and special steps will be taken to find him employment suited to his disability.

The particulars of disability obtained in respect of the men will be arranged statistically, and when sufficient material has been collected, it will be possible to ascertain from these first of all for each locality, and subsequently for the whole kingdom, the exact disability of men successfully placed, and also those disabilities which have proved an obstacle to employment. From this each locality will be able to prepare a list of occupations suitable for men suffering from various forms of disability, and also of those disabilities which preclude a man from entering the ordinary industrial occupation of the district. These schedules will be sent to the Central Office, where they will be classified. A complete list will then be constructed and circulated to all Exchanges, showing on the one hand how far a man may be expected efficiently to carry out given work in spite of given disabilities, and on the other those disabilities which, so far as certain industries are concerned, are insuperable.

Joint Sub-Committees.

Up to now we have indicated what may be regarded as the parallel action of the Local War Pensions Committees, engaged primarily with the man's restoration to health and financial independence, and of the Local Advisory Committees, with the assistance of which the Employment Department is engaged in promoting his search for work. It is obvious that in such a scheme co-ordination is imperative if there is to be no waste or duplication of effort. This has recently been secured by an arrangement under which, at the invitation of the Minister of Pensions and the Minister of Labour respectively, the Local War Pensions Committees and the Local Advisory Committees select certain of their members to form a joint sub-committee in every Exchange area, thus ensuring that the information collected by either body can be readily interchanged and the man's career supervised, as it were, on both sides at once. At the same time, as the joint sub-committee deals with all cases in which discharged disabled men are seeking civil employment, it is no

longer necessary to determine which men should properly be assisted by the Employment Exchange and by the Local War Pensions Committee respectively.

Having thus gathered together all the information available locally in respect of the employment of disabled men, the joint sub-committees, knowing that certain disabilities preclude men from entering certain occupations, will inquire from local employers what other vacancies there may be which men with such disabilities can fill. If suitable openings cannot be found, the joint sub-committee will refer the case to the special officer attached to the division, who will then seek for openings in other parts of his area.

If this fails, application will be made to the special section in London, and in the end the Ministry of Labour and the Ministry of Pensions will be in a position jointly to decide what special action, upon national lines, is required to provide employment for the residue.

Special Arrangements for Officers.

Officers about to relinquish their commissions in His Majesty's Forces are asked by their Commanding Officer, on behalf of the Admiralty or the War Office, whether they desire advice or assistance in regard to civil employment. If so, they are put into direct touch with the Ministry of Labour, which has set up a special organisation (to which an Advisory Committee representing every kind of profession, business and commercial interest is about to be attached) for dealing with them. This organisation collects particulars of openings available, information as to prospects in any given direction, and agencies (as a rule linked up to it) which would be helpful. It interviews, either at its branches in various parts of the kingdom or through its affiliated bodies, all applicants as near their homes as possible. It is closely co-ordinated with the Ministry of Pensions, and a liaison officer works at its premises, so that the functions of that Ministry in regard to the treatment, training, pension, gratuity and employment of disabled officers are exercised without overlapping and with the fullest exchange of information and facilities. If an applicant's disability is such as to render him a case solely for treatment or pension, the records are transferred entirely to the Ministry of Pensions.

In addition, the Professional and Business Register receives a certain number of applications direct from ex-officers who do not in the first instance avail themselves of the War Office facilities.

Steps have been taken, and further developments are in contemplation, to use, so far as possible, all the existing public, semi-public and private bodies which are interested in the welfare of discharged officers. These may be grouped under seven headings :—

1. The branch offices of the Professional and Business Register in the provinces. There are at present seven of these, and others are being organised.

2. The Appointments Boards of the various Universities (16 in number) of the United Kingdom. (The system adopted is one of mutual notification of applicants and vacancies and of periodical report.) These University Appointments Boards are in many cases in close touch with firms of the highest repute, and their full knowledge of the members of the University who are on their books renders their co-operation very valuable. These Boards deal with a great variety of openings of all kinds in business, commerce and the professions generally.

A small Advisory Committee, appointed by the Boards, works in collaboration with the Register for administrative purposes.

3. Certain other organisations are treated in the same way as University Appointments Boards, and maintain registers of applicants and vacancies. These "affiliated bodies" at present are the Artists' Rifles O.T.C. Organisation, Inns of Court O.T.C. Organisation, and the Cavendish Association. It is proposed to add other approved bodies, especially the Regimental Associations.
4. Certain of the more important Professional Societies and Institutions maintain registers of applicants and vacancies connected with their profession. Inquiries are at present in progress with a view to securing full information as to such registers. It is proposed that when a Professional Society of high standing has a competent register of this kind it should be regarded as an affiliated body for dealing with ex-officers desirous of entering that profession.
5. The Chambers of Commerce throughout the Kingdom have been circularised through the Federation of Associated Chambers of Commerce, and this has led to direct relations between the Register and certain of these Chambers. Many of the Chambers keep Registers of applicants and vacancies, and their co-operation is very valuable.
6. As regards openings in the Far East or the Colonies, the India Office and Colonial Office have set up an official committee to deal with these questions. This committee maintains a Register of applicants and vacancies, and co-operation has been arranged between it and the Professional and Business Register, which refers to the committee such ex-officers as desire Eastern openings and as cannot be placed in them by the Register. On the other hand, the committee refers to the Register such ex-officers of the Indian Army as now desire to take up appointments at home.
7. As regards the general question of Overseas openings, the Professional and Business Register is also in touch

with the Emigrants' Information Department of the Colonial Office, and informal communications have also been opened with the Department of Overseas Trade and the War Trade Intelligence Department; but the general question of Overseas openings is temporarily in suspense until the setting up of the proposed Central Emigration Authority, in regard to which a Bill is about to be introduced into Parliament by the Secretary of State for the Colonies.

The vacancies with which the Professional and Business Register is itself dealing directly, reach it from various sources. Public bodies of various kinds and all large employers of labour have been circularised. In addition, the Register has access to the "National Clearing House Gazette" of the Employment Department, and acts as an Exchange in regard to it; that is to say, the Register hears of all the surplus vacancies not filled locally, which are notified to the Employment Exchanges every day, and submits the qualifications of ex-officers in respect of any suitable openings of this kind. It also hears of vacancies from the bodies enumerated above, and from certain of the various commercial organisations which are now being set up under private auspices to deal with trade after the war. Further steps are being taken in this connection.

The chief obstacles in the way of placing ex-officers in employment at the present time are two:—(i) The health of the officer, who is not, as a rule, released from the army until he is seriously unfit for Military Service, and consequently to a great extent unfit for civilian employment; (ii) the fact that for various reasons the young ex-officer is inclined to set too high a financial value on his services.

The Ministry of Labour, in co-operation with the Educational Departments and the Ministry of Pensions, is also setting up an Inter-Departmental Committee to deal with such questions of education or training as affect employment; and it is proposed to utilise already existing facilities (previously under the supervision of the Ministry of Munitions and now transferred to the Ministry of Labour) for preliminary training of disabled or convalescent officers while they are still serving with H.M. Forces but are not fit for general service. In this way it is hoped in many cases to lay the foundations of equipment for a career on demobilisation.

Results.

The system which has been so far outlined has only recently come into full operation, but it has been at work in varying degrees of completeness since April, 1915. Between that date and 8th March, 1918, a period of nearly three years, 204,083 discharged soldiers and sailors have been registered in the nine divisional areas of the Employment Department, an average of 1333·8 per week. During the same period 95,983 of these men found through the Exchanges their first civil employment after their discharge; a weekly average of 627. Naturally, however, with the prolongation of the war and the continual engagement

of larger forces, the number tends to increase. Thus, for the period 9th February to 8th March, 1918, the number of registrations was 10,888, or a weekly average of 2,722; while the placings for the same period were 5,106, or a weekly average of 1,276. Tables showing the registrations and placings for each division throughout the period are appended.

In another return the numbers of men registered and placed are shown under the headings of their respective industries.

It will be observed that about 50 per cent. of the discharged men who registered applications for employment at the Exchanges found through the Exchanges their first employment after their discharge. From the available evidence it appears that the remaining 50 per cent. is made up of men who have been able to obtain employment through their own efforts, and of men who find that they are not sufficiently recovered from their disabilities to take up employment.

Note upon the Determination of the Rate of Wages to be paid to Disabled Men.

In the summer of 1916 the Statutory War Pensions Committee invited the Board of Trade, which was at that time responsible for the Employment Department, to make some provision for giving authoritative advice with regard to the rate of wages which should be paid to disabled men. At the beginning of 1917, the War Pensions Statutory Committee was merged in the Ministry of Pensions, and the Employment Department was transferred to the Ministry of Labour. The Ministry of Pensions confirmed the request of the Statutory Committee, and as the result the Employment Department formed experimental Advisory Wages Boards in the 19 principal towns of the kingdom. These Boards consist of representatives nominated by Employers' and Workmen's Associations in the area, and are prepared, upon the application of any person interested, to advise with regard to the rate of wages which should be paid to any disabled ex-sailor or ex-soldier. In considering the advice which they should give, the Boards have no regard to any pension to which the man may be entitled, and they endeavour to assess the industrial value of the man as compared with a normal workman employed upon the work which the disabled man proposes to take up. The Boards have no powers to enforce their decisions.

Up to the present time large use has not been made by employers and workpeople of the experimental Advisory Wages Boards. At the same time, an increasing demand is being made for machinery of this character to assist employers to ascertain the appropriate wages to be paid to disabled men, and there is no doubt that at the conclusion of the war very much greater use will be made of such machinery.

Since the Advisory Wages Boards were set up the Ministry of Labour have formed Local Advisory Committees in connection with each Employment Exchange. These committees find it

necessary to form "Trade Panels" consisting of employers and workpeople in the principal local industries. It is obvious that these Panels are particularly well suited to advise upon the question of the wages to be paid to disabled men. It is proposed, therefore, to invite the Local Advisory Committees throughout the country to make themselves responsible for giving advice of this kind. The work of the Experimental Advisory Wages Boards will thus be merged in, and extended through, that of the Local Advisory Committees.

TABLES.

A.—SUMMARY BY DIVISIONS SHOWING THE REGISTRATIONS AND PLACINGS OF DISCHARGED SOLDIERS AND SAILORS FOR THE PERIOD 1ST APRIL, 1915—8TH MARCH, 1918.

Division.					Number of men registered.	Number of men placed.
London	...	...	...	...	55,723	25,119
South-Eastern...	...	...	...	...	17,923	9,267
South-Western	...	...	...	...	17,768	8,396
West Midlands	...	...	...	...	16,930	9,019
East Midlands	...	...	...	...	10,088	6,078
Yorkshire	...	...	...	...	14,056	6,751
North-Western	...	...	...	...	29,005	14,044
Northern	...	...	...	...	8,429	3,881
Scotland	...	...	...	...	12,000	5,347
Wales ...	...	...	...	...	11,219	5,090
Ireland	...	...	...	...	10,942	2,991
United Kingdom					204,083	95,983

N.B.—Registration and placings are only recorded as of discharged men when they are first placed in civil employment (a few days' casual civil work being ignored). When once a discharged man *has* been placed, he counts as an ordinary civilian for the purpose of Employment Exchange Statistics.

B.—RETURN SHOWING REGISTRATIONS AND PLACINGS OF DISCHARGED SOLDIERS AND SAILORS BY TRADES FOR PERIOD FROM 1ST APRIL, 1915, TO 8TH MARCH, 1918.

					No. of men registered.	No. of men placed.
Building—						
Carpenters, Joiners, &c.	...	...	...	...	1,147	605
Bricklayers	...	...	...	...	647	331
Masons	...	...	...	...	257	102
Painters, Decorators, &c.	...	...	...	...	1,625	800
Plumbers, Glaziers	...	...	...	...	300	143

	No. of men registered.	No. of men placed.
Building— <i>continued.</i>		
Other skilled occupations	477	264
Labourers	4,357	2,804
Construction of works	2,418	1,653
Sawmilling	528	321
Shipbuilding—		
Platers, Riveters	392	196
Shipwrights	114	67
Labourers	2,856	1,790
Mechanical Engineering—		
Moulders (Iron and Steel)	461	263
Smiths	586	291
Erectors, Fitters, Turners	3,349	2,098
Metal Machinists	2,266	1,441
Wiremen	639	334
Other skilled occupations	2,743	1,498
Labourers	14,335	10,364
Making of Vehicles	797	469
Cabinet Making, &c.	477	194
Mining and Quarrying	1,979	648
Miscellaneous Metal Trades	1,448	965
Textiles—		
Cotton	1,245	533
Wool and Worsted	452	212
Other Textiles	528	307
Dress—		
Boot and Shoe Workers	634	315
Others	682	175
Conveyance of Men, Goods, and Messages—		
On Railways	1,705	924
On Roads, Seas, Rivers, &c.	46,168	19,209
Agriculture	2,077	559
Paper, Prints and Books, &c.	533	207
Wood, Furniture, Fittings, Decorations	232	108
Chemicals, Oils, Grease, Soap	12,146	6,230
Bricks, Cement, Pottery, and Glass	302	170
Food, Tobacco, Drink, and Lodging—		
Bread and Biscuit Makers	739	328
Others	836	359
Skins, Leather, Hair, &c.	389	161
Precious Metals, Jewels, &c.	194	71
Instruments and Games	56	21
Gas, Water, Electrical Supply, and Sanitary Service.	429	332
Commercial	12,934	4,847
Domestic—		
Laundry and Washing Service	333	145
Others	8,809	3,674
General Labourers	50,343	21,797
Shop Assistants	2,181	660
All others	15,938	6,999
TOTAL ...	204,083	95,983

N.B.—Registrations and placings are only recorded on this form when the man is first placed in civil employment (a few days' casual civil work being ignored). When once a discharged man has been placed, he counts as an ordinary civilian for the purpose of Employment Exchange Statistics.

TRAINING AND ITS RESULTS.

By MRS. WOOD, London Local Pensions Committee.

“The noblest charity is to prevent a man from accepting charity, and the best alms are to teach and to enable a man to dispense with alms.”—(TALMUD.)

I have been asked to prepare a paper on “training,” but dealing only with the period when the disabled man passes out of tutelage and enters into competition in the labour market, so that, properly speaking, it appears to me that this should be termed “employment” rather than training.

I feel considerable difficulty in contributing any suggestions worthy of consideration for two reasons :—

1. That the real problems connected with this phase of pensions’ work will not arise until after the conclusion of war conditions, and are, therefore, conjectural at present.
2. That the training of disabled men is still so much in its infancy that there has not been time for material evidence to form, nor opportunity for observation to establish, the crucial points connected with it.

It would seem obvious, therefore, that any discussion on this subject must be confined to generalities, and aim at foreseeing, and, if possible, forestalling certain probable difficulties, and since prevention is proverbially better than cure, the time of the conference will not have been altogether wasted if this is achieved.

When does the problem of a disabled man’s *employment* begin? When he is disabled; *not*, as so often appears to be thought, when he emerges from a course of training. Training is simply a means to an end; therefore, the attention of all who deal with the men, from the hospital visitor, who talks in general terms to the technical experts who discuss the man’s choice in detail, should be directed almost solely to the achievement of this end. The real problem is not so much what a man *can* learn, or what trainings *can* be provided by energetic departments, but what will best secure regular employment for each individual.

When the men requiring or desiring training could be counted in units the question of the patronage of the trades which they were to enter might appear immaterial, but when the candidates number scores and hundreds it is obvious to all that the interests of the commercial and labour worlds are so vitally concerned that they *must* be considered; and further, though it is certain that under existing conditions the associations both of employers and employed could be largely ignored, and men could be placed in employment without their consent and co-operation, if our men are to have the best chance of success in life, they must be

absorbed into the recognised corporate life of the trade they have entered as quickly as possible. The attitude of trade organisations, therefore, is clearly one of paramount importance, for if the trade has controlled the general scheme of training and decided the number of men admitted to the course, the trade can reasonably be expected to provide *employment of a permanent character*, and in that last sentence lies the whole test of the soundness of any training schemes, for we are engaged in equipping men for their whole future.

Assuming that trade control has been secured, the next problem is the selection of candidates for the various sources of training. It is undeniable that this question, like most other problems that have been conceived of the war and born in haste, has not been scientifically treated. Makeshift measures devised by those who wanted to help, and saw a need without realising the pitfalls, have, as is not uncommon, complicated a question already full of difficulties, and since it is usually easier to set a ball rolling than to stop it, the unnecessary problems so created have now woven themselves into the fabric of our work, and become an integral part of the whole matter. Practice is held to be better than precept, but I am increasingly convinced of the desirability of first founding the practice on some reasoned and logical "precept." Now, this is precisely what has not been done in regard to training. An obvious, but almost entirely neglected, precaution would have been the deliberate and careful drafting of men into trades allied to their former occupation. Up to date, if a carpenter wishes to become a motor driver, or a plumber a dispenser, the instinct of most of those dealing with this question has been to give him the tuition he wanted, if possible; and you will find that a War Pensions Committee that takes up a firm attitude in this matter comes in for much—shall we call it?—criticism in the vernacular! I have even heard it argued in this connection that there is nothing in the Warrant to justify the refusal of training to a man who has already a skilled occupation to which he can return. Now this question will affect the future employment of trainees to an extent it is impossible to exaggerate. The debt owed to the disabled cannot be repaid, but it can be acknowledged by a constant and unceasing endeavour to safeguard their material future in every way possible, and this will not be done by encouraging dislocation of trade. The training of men who are already equipped with tools they can use in the labour market would benefit nobody, and could not but adversely affect the general question of employment after training. It should, it seems to me, therefore be accepted, firstly, that a man having a skilled trade he can return to should not be considered eligible for training; secondly, that in the choice of a new trade, primary and invariable consideration should be given to the finger posts of his past; the materials he has worked on, the tools he has been accustomed to handle, the general characteristics of his former calling furnish the best foundations on which to build afresh. Expert workers reap bitter harvests from the unwise advice given to men by uninitiated enthusiasts who descant in glowing terms to some horny-handed

son of toil of the glories of diamond polishing or lacquering, and the employment of the trainees would undoubtedly be furthered if each man's thoughts were from the outset guided into a channel tributary to his upbringing and custom.

Sometimes such a connection is obvious, sometimes difficult to find, but the search for it should never be abandoned until every clue has been sifted and tested; and if each trade or group of trades could re-absorb men previously employed in one or other of their branches, the problem would dwindle to manageable proportions, and this would also tend to prevent the appalling overcrowding of certain occupations, especially of those where no trade control has been secured, and where there is nothing therefore to check the tidal wave one watches horrorstruck but impotent. For instance, probably every worker has found that there are one or two professions endowed with a sort of halo by those outside them. Leave the candidates for training unguided, and 90 per cent. of them will demand Motor Driving, Electrical or Clerical Training, whilst probably not more than 5 per cent. of them are suitable for any of these, or will ever stand a chance of holding their own in an overstocked and keenly competitive market. And, like the stone thrown into the pool with its ever widening circle of ripples, so a lack of discretion and firmness in the initial stages when the choice of training is under discussion, will wreak harm far beyond their first obvious results. An "overstocked and highly competitive market" means struggling by all and any means to keep a footing, and remember our trainees will all have their pensions. Beaten in fair competition, that pension may be used as a weapon to enable them to fight, and there we are immersed in the whirlpool every thoughtful man and woman is striving to avoid. A pensioned man has, in the eyes of the labour world, the same ominous possibilities as female labour, child labour, or alien labour.

A further safeguarding of the employment question would result in the finding of some solution for the problem of those who can *never* compete on fair terms, however scientifically treated. The ranks of these are supplied mainly from two channels—those who are handicapped by the severity of their disablement, whose plight arouses keen and instant sympathy, and those who are not fortunate enough to make such appeal, namely, the men whose physical strength was their only real asset, who return from war service with this asset seriously impaired, and whose intellectual standard, age, and upbringing render them practically untrainable. Unless the State steps in and provides specially equipped workshops, agricultural colonies and the like, it is difficult to see what can be done for these unfortunates. More has been done abroad than in England in this direction, anyhow for the first category, and it has been found possible, by means of specially devised tools and appliances, to employ severely disabled men both on the land and in special factories. It is held by some that there would be great opposition to such a suggestion, because these establishments would undoubtedly have to be subsidised, but since the cost of production

would be so high as to exclude the possibility of their entering into competition on a commercial basis, I do not see why any criticism based on the fear of unfair competition, could not be met.

Even when all possible preliminary care has been taken in the guidance, selection and training of individuals, since it is impossible permanently to earmark certain trades for disabled men, the time will come when they will have to face competition, whether they are absorbed into the ranks of an established industry or encouraged as pioneers of a new trade.

War conditions have engendered a touching belief in the value of tabloids, our nourishment, our medicine, our holidays, our trainings, everything except our taxes and our committees are taken in compressed form. And so every disabled man is taught a new trade on the cramming system. It is inevitable that this should be so, for the full-grown man, probably with dependants relying on his earning capacity, cannot afford to give years to learn his craft, like an apprentice who enters the arena as little more than a child. The rapidity with which men skilled in one trade can acquire the technicalities of another is a constant source of surprise and wonder, but, all the same, certain difficulties have already shown themselves. A man working in a technical institute under supervision, with his income assured, and his work subject only to instructive and helpful criticism, has a security and peace of mind which cease as soon as he becomes a competitor in the labour market. Bereft of the instructor's support, he becomes less sure of himself and works slower; working only on one process perhaps for some time, he loses what he thought he had learnt of another, and when called upon to practise it finds he needs almost to relearn it: thus, a man who topped the class in the technical institute finds himself handicapped when pitted against men with years of experience and skill. Personally, I believe it will be found necessary to bolster up most trainees when they emerge from training in a technical institute, and that the recognition of a sort of kindergarten period in the man's workshop experience will be found essential. To what extent employers will be prepared to countenance this after the cessation of hostilities remains to be seen, for it must not be forgotten that at present we are only faced with the task of fitting men to take up jobs which will otherwise probably remain undone, whereas we shall then be faced with the fitting of men to compete with other sources of supply, and the employer who recognises his debt to the disabled man may find himself handicapped in production, through the complications of questions of insurance, compensation, &c., coupled with the alternative supplies of labour which the less conscientious are prepared to take advantage of.

It has been suggested that every big firm should be approached and asked to absorb a definite percentage of disabled men, and if sufficient support were given to such an idea it might be of substantial assistance in relieving anxiety as to the permanent provision for the men whose future we are all anxious to secure;

such support would undoubtedly be easier to obtain if the suggested principles as to the selection of men were generally accepted.

It may be asked how the machinery of Local War Pensions Committees which has been devised in this country, is concerned in this matter. I should say that they ought to act as junctions in what may be described as shunting operations. The Local War Pensions Committee is, after all, more often than not the first responsible authority with executive powers to come into contact with a discharged disabled man. It is up to the War Pensions Committee, therefore, to see that the schemes of training are based on a sound, well reasoned general policy; that this policy is carried out, that the best possible advice is available to direct the man's thoughts, that the means for providing the training recommended are available, that the whole question of training is considered in conjunction with that of employment, and, therefore, that other State Departments already occupied with that subject generally are brought into such close relationship that their valuable experience and organised machinery are available for the benefit of these men. The importance of dealing with all social problems on a human basis is more and more acknowledged, and those whose privilege it is to work for the war disabled have their great opportunity in the fact that their duties bring them into immediate and intimate relations with the daily lives of the men and their families from the time the nation's service first claims those men, and the War Pensions Committee whose job is properly done will find that its official functions are soon lost sight of, that it becomes a sort of domestic William Whiteley, universal provider of all that is needed, because its visitors and workers are absorbed into the homes they go to until they are no longer giving, but sharing. If proper use is made of these opportunities, the disabled man will not only go to his Local Committee, but he will go with the confident expectation of getting practical help inspired by sympathetic interest; and if his family have already told him that the committee, or as it will more probably be described "the pensions' lady," has helped them to surmount this or that difficulty, has smoothed the awe-inspiring intricacies of official correspondence, and has mysterious but infallible powers behind her which are demonstrated in various but gratifying manner, that man will probably be prepared to listen to the visitor's advice, and can thus be put into the right train and speeded on his journey.

STATE AND LEGISLATIVE PROVISIONS FOR THE PLACING OF WOUNDED SOLDIERS IN ITALY.

BY DIEGO MARTELLO.

General remarks.—If the question of placing wounded soldiers has constituted and constitutes for all the belligerent countries one of the most interesting sides of the complex problem of providing assistance for those rendered unfit by war, it has assumed particular gravity in Italy, where, though faced with a fewer number of disabled men, the general economic disturbance is greater, and there is a minor possibility of utilising the human labour apart from the diverse forms of industrial and commercial activity.

Fortune, however, has willed that the students of the problem, perceiving these great difficulties from the first, should have directed the professional re-education of the disabled men towards those trades which can be most readily practised in the home, so that, on the completion of the first cycles of re-education, the number of the disabled men to be placed was less than what might have been reasonably presumed. It might have been still less had not all those obstacles of a highly different nature so well known to the students of the professional re-education problem prevented a vaster and more immediate placing of the disabled men in the agricultural schools.

In any case the question of placing at once found all the various committees and local institutions for the assistance of those disabled in war well prepared, upon whose help it has now been demonstrated that one must rely for the success of the work.

They provided an abundance of means and enthusiastic fervour, constituting offices and special commissions, and co-ordinated their own action with that of the other organisms that might be able to help them, organisms such as the public offices already having for object such form of assistance, the commercial and industrial organisations, the trade guilds, the committees of industrial mobilisation, &c.

Then, in the process of time, the necessity of harmonising such action and co-ordinating it with a greater unity of direction was recognised, and for the work of the National Federation of the Committees, a central office for employment was constituted that quickly gave truly remarkable results, thanks to the help accorded by the various Ministers, especially the Minister of Munitions, who has charge of the organisation of all the war industry.

To these various initiatives later came that of the National Association of the Disabled in War. Among the different forms of assistance provided for their own members, they had not over-

looked the great essential item, viz., the employment of its members. The intervention of the Government and the legislator, however, was not quite so ready.

This is, perhaps, a phenomenon common to all other countries, which might be explained by the natural spontaneousness of private initiative as against the inevitable slowness with which the bureaucratic machine moves. The legislator whose duty is normally to check, guide and integrate the manifested activities of the national life is forced to proceed with this machine.

Though delayed, this activity is not, however, less worthy of note, first for the principles which have inspired it, and then for the complexity of the dispositions with which it has materialised, dispositions that in their one aim of defining and guaranteeing those positions of right with which it is thought to be a duty to invest the glorious men disabled in war, as a tangible pledge of the nation's gratitude.

It is on this work that we intend briefly to dwell, leaving to others the task of illustrating how much has been done in the same field of work by spontaneous private initiative.

Legislative precedents.—Legislative remedies in the matter of employment at first were, as was natural, sporadic and fragmentary.

The dispositions contained in the Royal Decrees, March 12th, 1916, No. 307, and April 9th of the same year, No. 400, belong to this first period. By these decrees, to the derogation of the prohibition of recruiting new personnel in the public administrations,—a prohibition, be it understood, to protect the public exchequer and at the same time to safeguard the rights acquired by the various classes of Government servants—there was conceded the faculty of assuming temporarily, with the simple object of guaranteeing the continuation of the public services, the necessary number of substitutes. At the same time it was determined that, in the procedure of engaging such substitutes, the preference should be given to those who had been disabled in war.

Henceforth there were repeated demands on the part of those who had the welfare of the disabled at heart that their future should be better provided for; and since, in the meantime, the number of re-educated disabled, calling for their place in life again, was gradually increasing, the Government, ever aiming at a solution of the problem, with the presentation of a project of law containing greater and wiser provisions for the placing of such men, provoked the promulgation of the Royal Decree, August 10th, 1916, by which, while for the first time giving a series of organic regulations for the assistance and protection of the disabled, disposes that the institutions, on determining on such form of assistance, not only should see to a more rigorous application of the two above Decrees, but should also take care that the disabled, as soon as trained, should be admitted into the Army and Navy as well as to public employment. The institu-

tions should, furthermore, see to their re-admission to private firms, invoking in regard to the disabled the dispositions provided by the legislator in favour of those recalled to the colours, dispositions of which more will be said when the laws instituted for the national work for the assistance of the disabled in war are taken in examination.

To give practical application to these Decrees the Government provided for the drawing-up of temporary instructions by which it aimed at regulating the relations between the Institutions for Assistance and the Minister of War for the keeping of a general current list of the disabled ready for employment, and also between the said Minister and the other public bodies for the eventual assumption of temporary personal, giving preference to the disabled. The said instructions furthermore disposed that the inspectors of industry and of labour should interest themselves in favouring the filling-up of vacancies in industrial establishments through the local employment bureaux. It was also fully established that, wherever these disabled men were employed, they were not to be placed in competition with the other workers, especially as regards wages.

Thus the formulated principle was consecrated, not without discussion, at the Congress of Paris: Equal production, equal salary.

But specially worthy of note in such temporary instructions is the disposition in force according to which, for the first time, came to be formally prescribed the sending out, first of all, to the various sections of concentration and to the various training schools later, according to the regional circumscriptions, it was established that the disabled should be sent to the sections and schools instituted in the Army Corps territories where the respective families had their habitual residence. Thus indirectly and automatically were created those favourable conditions of atmosphere upon which to a large extent depends the success of the work of employment.

The new law.—These, in brief, are the dispositions published by the Government on the subject of the finding of employment whilst awaiting the approval of the Chambers of the project which was presented in June, 1916, and which, after various parliamentary incidents which we cannot go into here, finished by becoming law 25th March, 1917, No. 481 of the Opera Nazionale per la Protezione e l'Assistenza degli Invalidi della Guerra (National Committee for the Protection and Assistance of Disabled Men).

As is known, the new law started a national corporation, supplied with ample faculties and destined essentially to co-ordinate, integrate and discipline the work carried out by the Local Committees, to whom the real task of administering assistance is entrusted.

The greater part of the dispositions contained in the text of this law are therefore intended to discipline the constitution, the

attributions, and the working of the two orders of institutions, and also to establish the relations of interdependence of the same. At the same time there are those rules which are intended to determine and protect the different rightful positions created for the disabled men, also under the preceding legislative dispositions.

The finding of employment, as all the principal other forms of assistance, has therefore been entrusted to local committees and institutions. The law has not thought fit to create any new organisation, and we think this opportune : it has limited itself to ensuring the regular working of the organs already existing, completing them wherever deficient, substituting them wherever unequal to their aims, creating them wherever they had not been instituted, controlling and co-ordinating their action and consistency, lastly coming to their aid with those grants which the legislation already in vogue with regard to labour, agriculture, industry and commerce could offer.

By co-ordinating the dispositions already published with other new ones, the law governs in a practical manner the favourable treatment to be granted to the disabled men both in public and private employment. Such dispositions, which we will now rapidly examine, have for substance the following principles : Continuance of military service, re-admission into public offices, facilitations for the application for new posts, re-employment with private concerns.

Retention in the Army.—According to the new law, soldiers, who in accordance with the dispositions in vogue have been declared disabled, may, when their disablement allows them to, remain in the Army if the Military Authorities consent.

Such a disposition was expressly placed before all others, almost as an honour, it being a unanimous conviction, as affirmed in the senatorial report, that the unfit who have already worn the honourable military uniform should wish, when they can and when they are allowed to, to belong to the Army or Navy, as they have well deserved.

But this not only succeeded in performing a duty towards these disabled men, but evidently aided in a great measure to the discipline and contributed to the credit of the Army, as the permanency of the glorious heroes of war in its ranks constitutes a precious element of incitement to action and fervid love for one's native land.

For the practical actuation of the new law, the Decree of the 14th of June, 1917, No. 1032, was published, and this established a distinction between soldiers who, in spite of their disablement, can continue in active service and those who are instead only able to undertake sedentary work.

The former may, almost without exclusion of rank and in an unlimited number, after the suspension or repeal of every provision for pensioning or permanent discharge, be taken back into the Army, passing, however, into the reserves.

For both these categories, however, their respective rights to advancement hold good; and both, during the whole of the period they are serving, will have the right to receive, over and above the privileged pension, the salary due to the officers in permanent active service of equal rank of the same corps.

Both of them, in addition, although being able to remain in the service right up to the age limit generally prescribed, may at any time ask to be pensioned, and they will in any case have the right to add the privileged pension already obtained to the pension due to them for the period of service subsequently given.

Special detailed rules, of course, regulate the manner of establishing the physical fitness of the applicant as well as the terms of the request to be reinstated into the Army.

Facilities with regard to the re-admission and admission into public offices and works.—The facilities which the law grants in this section may be divided into three categories: the right to re-admission into the offices, the bestowal of posts without competition and the preference in competition where talent or attainments are equal.

With regard to the re-admission into the offices, the law provides that the disabled man shall be re-admitted into public offices where they were employed at the time of their being called to the colours for the present war and for the non-military at the time of the act of war which caused their wounds, providing they have re-acquired the capacity to lend useful service.

It should be noted in this regard that the project of law limited this right only to those soldiers who had been trained and exclusively with respect to the post previously occupied. The Parliamentary Commission very wisely suggested that the original text should be modified in the sense of extending the privilege to the non-military rendered unfit by acts of war and to consent to the re-admission being effected, according to the physical conditions of the disabled man, either for the post which he already held or for one under the same conditions more adapted, provided it be of equal rank or grade.

Another wise provision is that regulating the application of the law under examination, on the basis of which the disabled man who resumes his old post, or is admitted to a post of a corresponding rank, in every respect continues his former service. Nor less wise is the proviso in virtue of which the posts already held by disabled men may not be permanently occupied until a definite decision has been given on the request of re-admission on the part of the unfit person or until the period granted for the presentation of the request has already elapsed without such a petition having been made.

Of course the re-admission to service is subject to the applicant being recognised as being physically fit, for which purpose a medical certificate will be required, and, if necessary, special examinations as well.

The bestowal of posts without competition was limited, on the basis of the Decrees which were mentioned in a former passage, to certain cases. It was, thanks to the unanimous insistence on the part of the various interested institutions, that the legislator was induced to extend this privilege to fixed posts, limited, naturally, only to posts of a lower category, it appearing necessary to tranquillise with regard to their future those who had sacrificed themselves so much for their country and who have, besides, almost always given such tangible proofs of tenacity and love for work in the apprenticeship lasting for some time in the training schools.

With this object the law provides that, as a rule, there should be indicated the kind of employment which, derogating from the existing laws, the Government could have conferred upon disabled men without competition, with the exception, however, of the posts of a higher grade and of the administration.

In the regulation published in August, 1917, there were inserted the tables giving, for the various Ministries, the different grades of employment to which the disabled man might have access by direct application, either to the central offices or to the provincial ones; for each grade there is given the number of posts to be assigned to disabled men both in proportion to those free and in proportion to the total number for each category, so as to avoid, in connection with the more or less complex nature of the employment, any danger of perturbing the course of the public service.

And since preceding dispositions prohibited, during the period of the war, the admission of new employees, it was also very wisely decided that exception should be made in favour of the disabled men in order not to delay their chance of reaping the benefit of the privilege sanctioned by the legislator.

The procedure for the admission is very simple. The applicants simply have to present their petition to the "Opera Nazionale," furnishing such documents as prove that they possess the qualifications prescribed for each of the posts in the respective administrations; the latter then choose from the various applicants those whom they consider most adapted by their qualifications for the vacancies.

Preference in competitions and special competitions.—Another facility granted by the law is that on the basis of which the condition of being a disabled man constitutes a right to precedence, in the case of equality of talent and qualifications, in the graduation of the competitions for admission to public employments.

And a last facility is that consequent on the faculty conceded to the single administration departments to establish rules and regulations for the bestowal on disabled men, by competition, of employment not included in the table of which mention is made above, provided they are not of the higher grade or

connected with the accounts department, on special conditions, not excluded the eventual reservation of a part of the said posts exclusively to the disabled man.

Facilities of a general character, always in connection with the re-admission and admission into public offices and works, have also been granted both by law and by rules and regulations.

Among these the following are worthy of mention :—

- (a) The faculty granted to the public administration to derogate, when it is considered opportune, in the interest of the disabled men from the age limit established by their respective regulations for the nomination and admission to the competitions.
- (b) The regulation in view of which by preference and precedence shown the disabled men for admission into public offices; they are placed before all others.
- (c) The right to add the privileged pension to their salary, during service, and to the civil pension when pensioned off.
- (d) The possibility of obtaining bonds for those employees for whom it might be required, by allotments from the war pension or from corresponding temporary allowances, in such a measure, however, as not to exceed one-third of the sum annually paid under this heading.

Admission to private concerns.—With regard to the treatment to be received by disabled men in connection with their re-admission or admission into industrial concerns and commercial offices, the legislator was confronted with much greater difficulties, as it was a question of invading private territory.

As is known, the question has been long discussed also at the Congress at Paris, which finished by deciding that it should be left to the legislator in the various countries to determine whether firms could be forced to employ disabled men, limiting themselves to expressing the wish that a moral obligation might be felt on the part of the private firms to engage the disabled men in a number proportionate to the importance of the respective concern. The question was resolved in a different manner in the different countries; in some, as in France, it was established that the industrial and commercial firms should not be able to obtain a concession, monopoly or subsidy from the State, or from public institutions unless they reserved a certain number of situations to the disabled men according to the limits of their obligations. This necessitates complex regulations, with detailed instructions and tables to establish according to the capacity, infirmity, dependents, &c., the right to the different posts.

Before such complications and difficulties the Italian legislature did not think fit to study the problem radically, and considered it to be sufficient to extend to the disabled men the regulations which by a Decree of May, 1916, had been adopted in favour of the employees of private firms called to the colours. On the basis of this disposition, in the firms who habitually kept more than two employees, who, after having been in the same

firm for at least one year, are called to the colours, the employment contract holds still, although suspended until the end of their military service. The disabled men who find themselves in this position have, therefore, the right to be re-admitted to the occupation or position occupied previous to being called up.

It is, however, necessary that they should give proof of the re-acquired physical ability necessary to carry out the duties entailed, and that they should forward their request to the firm within one year from the cessation of war, both in the interest of the private firms, on which for reasons of social utility a restriction of privilege is imposed, and of the employees who may have been taken on for a temporary period in place of those called up.

It is to be noted that such privilege is also due to the disabled men who may have been discharged previous to being called up, should they be able to prove that the discharge was determined by the express desire to evade the obligations of the law; and let it be noted that the obligation, in the case of transfer, is assumed by the purchaser or licensee of the firm. Instead, principals who do not employ more than three persons are not affected, provided they themselves are called up. Of course, the larger extent of favour accorded either in virtue of local customs or by spontaneous concessions on the part of the firms remains unchanged.

Still dealing with the question of the employment by private firms, it is well to notice the regulations with which the Italian Government, bravely facing a problem long discussed elsewhere, has decided that the institutions who take out insurance for workmen against accidents whilst at work, should in their relative contracts insure, without exception, all the workmen engaged on the contract, including the disabled men, without right to exact an extra premium except a slight increase to be established by the competent Ministry when the number of disabled men exceeds 10 per cent. of the total number engaged in the industrial factory or on the contract for which the insurance has to be effected.

Conclusion.—From the foregoing it appears that the legislative dispositions can be grouped into two distinct classes; the first intended to govern the working of the central and local organs already constituted, or about to be constituted, in order to obtain unity and practicability of action; the second intended instead to specify and guarantee the single, rightful and favourable positions created for the disabled men, especially in the matter of public employment.

This second class of regulations and dispositions has, without doubt, minor importance, as the opinion in every country is now agreed that the smallest number possible of disabled men should be allowed to enter public service, exceptions to be made for those who, on account of the seriousness of their wounds, cannot be considered capable of earning a livelihood in another manner. The carrying out of these decisions has been entrusted, principally, to the various Ministries, and, although the legislation in question is of very recent date, it cannot be denied that it is in a great measure complete.

The work effected by the Ministry of Munitions is, for instance, worthy of special mention; it has even gone far beyond the restricted circle of its duties, organising a vast service for the finding of employment, instituting schools and special workshops for disabled men, furnishing machines and material gratis, studying every possible opportunity for perfecting working instruments, tools, &c.

The first class of dispositions is, however, very much more important, as, for instance, that on which really depends the solution of the complex problem of finding employment. As has been said, our legislation, in agreement on this point with that of other countries, has not thought fit to create special organisations. It has entrusted to the "Opera Nazionale," already entrusted with all the other forms of assistance to the disabled men, also the task of finding employment, determining that advantage should be taken, also in this respect, of the work of the local committees.

On the organisation of the work and on the aims to which it should be directed the legislator has not thought fit to impart special instructions; nor, it should be said, did that enter into his attributions. But it is just in this very important and delicate circle that the sagacity of those representing the "Opera Nazionale" will be tested.

In order to avoid that all the efforts accomplished up till now should be frustrated, and if it is really desired to create a morrow on which the illusions of to-day should not fall to the ground—if, in short, it is really desired to provide lastingly and usefully both for the disabled men and for the country, it will be necessary for the new organisation to take advantage of all the means which have been so providently furnished by the law in order to avoid that the action of the local institutions becomes inconsistent, chaotic and sterile.

It is, too, easy for empiricism to reign in a circle of activity such as this.

It is necessary that the experience of the past and the fruits of the studies completed should be taken as a guide in the direction of the action of those organisations. It is necessary that with each of these the grave and serious task should be entrusted to commissions and special offices, composed not only of willing persons, but also of men familiar with all the difficulties connected with the labour problem.

The action of these offices will be multiform and complex.

They should above all have a precise idea of the importance of their duty, and should be well acquainted with the conditions of the centre in which they have to accomplish their task, so as not to cause a loss of balance between the offers and requests of situations regarding each special category of industrial or commercial activity. They should then not only intervene when the training has been effected, but start right from the beginning of the time when assistance is granted to the disabled man, deciding technically the profession which can be followed by the disabled

man in relation to the exigencies of the different species of work and of the diminished physical conditions: they should inform the disabled man as to the real conditions regulating the work in the factories, overcome all prejudices, convince them of the utility of training, of the right they hold to war pensions, &c.

When the training has been accomplished, the offices should have care that the necessary period for the medico-legal arrangements should be reduced to a minimum, so that the pupils may be employed as soon as possible. Arrived at the moment of the choice of calling, they should take into account, opportunely graduating them, all the co-efficients which may contribute to such a choice and which have already been brought to light by the students of the problem; and also they should preferably employ them in their former profession and possibly in the same country in which they previously followed it or wherein their families reside; reserve the posts which require less effort to the more seriously wounded; concern themselves with the stability of the employment offered to them: induce them, where necessary, to take a period of complementary training; afford them, in short, all the assistance which may serve to facilitate their return to new life and work.

And all this should be done, at the same time trying to take advantage of the already existing means, avoid duplications, co-ordinate their action with that of other public and private organisations, thus awakening the attention and interest in the problem of all those who may be of use in the resolution of the same.

This is the labour programme which should be the aim of the new institution created by the Italian legislature, if it is desired that the gratitude of the country should be really translated, even in the national interest, into a concrete and lasting benefit.

CONGRES INTER-ALLIE POUR L'ASSISTANCE AUX INVALIDES DE GUERRE, LONDRES, 1918.

L'Oeuvre des Commissions Régionales Italiennes pour le Placement et la Tutelle après la Rééducation.

PAR M^{me} LE DOCTEUR OLGA MONSANI.

La dernière, par ordre de temps mais non pour son importance, est la partie de l'assistance aux grands blessés qui se rapporte à leur placement. Quelquefois on doit s'en occuper dès leur départ de l'hôpital, si le soldat croit pouvoir reprendre au moins partiellement son ancien travail, où se mesurer à une certaine tâche sans une préalable rééducation professionnelle.

Les initiatives privées ont devancé l'œuvre du législateur et celle qui vient de s'organiser—l'Œuvre Nationale—pour ce qui se rapporte au placement des invalides de guerre rééduqués ou non. Et cela est naturel. Les lois règlent selon des principes généraux les faits qui chaque jour se répètent ; et un pouvoir central comme celui de l'Œuvre Nationale naît le jour où on sent la nécessité de coordonner et harmoniser entre elles les institutions du même genre éparses dans les différentes régions d'un pays.

D'abord lorsque les premiers invalides laissèrent nos hôpitaux, lorsque les premiers hôtes peuplèrent nos maisons de rééducation professionnelle, les différents Comités et pour eux leurs membres les plus influents ou ceux de meilleure volonté s'employèrent pour trouver du travail à ces blessés. Mais les mois s'écoulèrent : notre guerre prit des proportions bien plus vastes ; nos hôpitaux comptèrent par centaines les soldats qui n'étaient plus aptes aux armes. Les Comités pour l'Assistance aux invalides de guerre, qui s'étaient formés dans les principales villes d'Italie, avaient déjà pris en considération deux des principaux problèmes qui se présentent à qui veut récupérer la plupart des énergies morales ou matérielles de nos blessés : la question de la prothèse et celle de la rééducation professionnelle. En troisième lieu il fallut considérer la question à laquelle aboutissent les autres : le placement.

Ce fut le Comité Florentin qui, le premier, à la fin de notre première année de guerre, en décembre 1915, réunit une Commission spéciale qu'on appela de patronage et de placement. Cette Commission, sous la direction d'un des apôtres les plus ardents de la rééducation professionnelle, le Professeur Ettore Levi, commença son apprentissage dans l'hôpital de Villa Bondi, qui bientôt eut aussi des ateliers pour la rééducation. L'apprentissage fut assez long. La Commission de Patronage et de Placement se développa ainsi en même temps que les autres œuvres

pour l'assistance aux invalides de guerre de Florence, et son travail s'harmonisa avec l'ensemble de ces œuvres.

Dans les années suivantes, les autres Comités italiens formèrent des Commissions analogues et aujourd'hui nous en avons outre celle de Florence, à Gênes, Milan, Padoue, Palermo et Turin, tandis que dans d'autres villes comme Ancône, Bologne, Livourne, Modène, Naples, Parme, Pise, Spezia et Ravenne les Comités pourvoient au fur et à mesure au placement des invalides qui rentrent chez eux, sans qu'une commission spéciale s'en charge.

En général les membres des Commissions de placement sont choisis parmi les personnes qui s'occupent des invalides soit dans les hôpitaux soit dans les maisons de rééducation et parmi celles qui ont le plus de relations dans le monde du commerce, de l'industrie ou qui disposent d'un certain nombre de relations personnelles. Le nombre de ces membres varie d'une ville à l'autre, mais en général il est plutôt restreint. Et cela est utile, car, dans les commissions exécutives comme celles-ci, il est préférable d'avoir un petit nombre de personnes bien appuyées sur un cercle de relations assez étendu. Ces personnes doivent rester le plus longtemps possible en contact avec les soldats blessés, même pendant leur traitement et leur rééducation pour chercher à les persuader et à les acheminer au travail. Dans cette œuvre elles sont aidées et dirigées par les médecins qui en général ont beaucoup d'influence sur l'invalidé qu'on veut récupérer.

Je ne sais exactement ce qu'on fait dans les autres villes d'Italie pour cette partie délicate de l'assistance qui revient aux Commissions de Patronage et de Placement. A Florence, où j'ai vu effectuer ce travail dès le commencement, on n'attend pas que l'invalidé soit parti de l'hôpital et vienne chercher du travail. Je crois qu'on fait de même, dans les autres villes, ou qu'on le fera dès qu'il sera possible.

A Florence, les membres de la Commission, avec la permission des autorités militaires, se rendent plusieurs fois par semaine dans l'hôpital où sont réunis les mutilés. Ils s'occupent de tout ce que les mutilés peuvent avoir à réclamer des administrations militaires pour eux-mêmes, des comités civils pour l'assistance aux familles &c., et au fur et à mesure que s'approche le jour de sortie de l'hôpital pour ces mutilés, on discute avec eux sur les conditions qui les attendent dans la vie civile qu'ils doivent reprendre. On leur dit tout de suite qu'à tous moments on sera prêt à les aider, à leur donner les informations, les secours dont ils pourront avoir besoin.

Pour les estropiés on a adopté d'abord le même système que pour les mutilés; mais les résultats ainsi obtenus étaient parfaitement négatifs. Pendant la période de traitement, quand l'estropié ne sait pas encore parfaitement le degré, l'invalidité qui lui incombe, il est peu incliné à admettre la possibilité d'un travail plus ou moins chargé et souvent il craint que la rééducation puisse lui enlever le droit à une pension de guerre plus forte.

La Commission Florentine pendant de longs mois continua à se rendre aux hôpitaux des estropiés, mais il lui fut impossible de gagner la sympathie et la confiance de ces derniers, comme elle avait obtenu celle des mutilés de Villa Bondi. Une première expérience non-réussie ne devait pas nous décourager : en effet une autre solution fut vite trouvée et qui a donné jusqu'à présent d'assez bons résultats.

Un changement psychologique profond se produit dans l'invalidé estropié de la veille de la réforme au jour suivant. Une fois la dernière visite médicale passée, une fois la pension accordée et acceptée, le soldat qui sait désormais sur combien il peut compter commence à regarder l'avenir qui l'attend. Il ne veut pas y songer avant. Tout de suite après, oui ! Une fois que la Commission Florentine eût fait cette constatation elle demanda aux autorités militaires d'envoyer les soldats invalides, à la veille de leur départ de l'hôpital et après leur réforme, au siège du Comité, pour être interrogés par les membres de la Commission. C'est peu en comparaison de l'obligation d'un séjour plus ou moins long dans une maison de rééducation, mais c'est déjà quelque chose. Il semblait d'abord que les autorités militaires auraient eu des difficultés à nous accorder cela. Il n'en a pas été ainsi. La décision a été prise rapidement et depuis un an elle donne ses fruits.

Chaque jour un nombre assez considérable de soldats reformés vient devant la Commission et ce sont désormais les soldats mêmes qui nous demandent des informations, des avis &c. Dans plusieurs cas l'œuvre de la Commission a été providentielle.

Sauf de rares exceptions la Commission ne conseille jamais à un soldat de se rendre immédiatement à une maison de rééducation. Nous savons qu'il désire surtout rentrer chez lui. Et encore, à notre avis, il ne serait pas utile. La puissance de réadaptation au travail de l'invalidé est immense quand c'est l'amour pour sa famille qui l'y pousse. L'invalidé qui retrouve sa maison, son champ, son atelier peut souvent se rendre très utile dans sa famille d'une façon que ni lui, ni nous n'aurions pu prévoir. Il serait nuisible de le distraire de cette première et simple solution du problème de son existence. Mais il y a aussi tous ceux qui ne trouvent pas chez eux et dans leur pays une façon de se rendre utiles et ceux-ci doivent savoir que les maisons de rééducation existent et en quoi elles consistent. On doit donner à tous l'adresse du Comité d'assistance le plus proche et tous doivent savoir que s'ils ne réussissent pas dans leur tentative individuelle, si l'oisiveté leur pèse, ils peuvent éloigner le fantôme du désespoir, car soit dans leur région, soit dans celle où ils ont été soignés il y a toujours quelqu'un prêt à les aider. Dans le second semestre de 1917 un millier environ d'invalides sont passés au siège du Comité Florentin.

Les résultats obtenus sont déjà reconfortants et on peut espérer qu'ils seront meilleurs en avenir. Il résulte des rapports des Comités italiens que cinq cents invalides par suite de blessures

de guerre sont placés. Ce chiffre est bien loin de représenter le nombre d'invalides réellement au travail. Tous ceux, et ils sont les plus nombreux, qui sortent de l'hôpital en déclarant pouvoir se passer de la rééducation et trouvent effectivement à se placer en dehors de notre aide, n'y sont pas compris. En tenant compte de tout ceci, le nombre de ceux qui ont été effectivement récupérés au travail est certainement plus considérable.

Le placement est assurément plus facile dans les centres industriels ; les Comités de Turin, Milan, Gênes et même Livourne l'affirment. Dans ces villes la recherche de la main d'œuvre, même des invalides, est supérieure à l'offre. Le bulletin publié à Rome par les soins de la Fédération des Comités contient tous les mois une liste de places offertes aux invalides de guerre dans les centres sus-nommés. Une partie de ces places reste souvent inutilisée, car les soldats réformés ont en général un vif désir de rentrer au pays et les Commissions de placement se gardent bien de les en détourner. On est généralement d'accord en Italie sur l'utilité de remettre autant que possible l'invalidé de guerre dans le milieu d'où il est sorti, de le rendre capable d'un travail analogue à celui auquel il s'adonnait avant la guerre, ou au moins à un métier qu'il puisse exercer dans son pays. Pour les soldats qui ne restent pas dans la ville où ils ont été soignés on se met en rapport avec les autorités des lieux de leur résidence : maire, préfet, curé, médecin, ou avec les institutions locales de bienfaisance qui peuvent l'aider sur place.

Naturellement ce travail de placement ne se fait pas d'une façon identique dans toutes les villes d'Italie, mais les principes qui le dirigent sont à peu près les mêmes. Le document fondamental est une fiche individuelle qui contient les indications nécessaires sur les conditions physiques et psychologiques du candidat et aussi sur son précédent travail, sur ses aptitudes et sur sa capacité. Ces renseignements sont établis d'après le jugement soit des directeurs de l'hôpital ou de la maison de rééducation d'où le soldat sort, soit de l'avis des membres des Commissions de Placement, parmi lesquels se trouvent des médecins spécialement compétants en matière d'accidents de travail et de rééducation professionnelle des invalides. Ces fiches forment le noyau d'une statistique qu'on pourra compléter le jour ou le recensement des invalides, que l'Œuvre Nationale vient d'initier, sera complet ? Cette statistique sera la base d'un travail nécessaire de tutelle que les Commissions de Patronage et de Placement devront continuer même longtemps après la rééducation et le placement.

L'œuvre des Commissions est plus utile pour les placements dans la ville même où elles sont constituées et surtout dans les milieux industriels et commerçants. Pour les emplois dans les administrations publiques on s'en est occupé jusqu'à présent, mais dorénavant l'Œuvre Nationale a pris pour elle de faire suivre et appuyer les demandes qui lui sont adressées soit à travers les Comités régionaux, soit directement des invalides. De ceci, comme de tout ce que l'Œuvre Nationale a fait et se propose de

faire en matière de placement M^e D. Martello de la Commission de Milan dira plus largement dans son rapport.

Les Commissions de Patronage se tiennent naturellement en rapport avec toutes les autres institutions analogues. Dans les villes industrielles elles utilisent des listes d'emplois régulièrement transmises par les Comités de Mobilisation Industrielle, et en même temps elles maintiennent d'étroites relations avec l'Association Nationale parmi les invalides de guerre, où parviennent aussi des demandes et des offres d'emploi. Souvent cette Association est représentée dans les Commissions mêmes, de façon à éviter d'inutiles dispersions de forces et de fâcheuses répétitions, dans le même centre, d'institutions ayant les mêmes buts.

Pour la qualité des placements en Italie on peut dire d'abord que les invalides provenant de centres ruraux retournent pour la plus grande partie au travail des champs, sauf dans le cas de mutilation très grave qui empêche la reprise même partielle de ces travaux. En ce cas ils apprennent un métier qu'ils puissent utilement exercer à la campagne comme le cordonnier, le sabotier, le tailleur, le vannier, &c.

Les invalides des villes, qui ne peuvent reprendre leur ancien métier, ont tous plus ou moins l'obsession de devenir employé de l'état, ou d'avoir une place de concierge, ou de garçon de bureau &c. Les Commissions cherchent à les persuader de s'adonner à un travail plus avantageux, soit pour eux-mêmes, soit pour la société. Cette persuasion obtient souvent d'assez bons résultats, et aussi il n'est pas rare que des invalides qui s'étaient d'abord contentés d'un petit emploi et s'étaient refusés à la rééducation ne la recherchent ensuite sous la force impérieuse des nécessités quotidiennes. Ceci nous conduit à la conclusion qu'il est nécessaire de suivre les invalides après leur placement et de former des répertoires méthodiques qui permettent de retrouver rapidement ce que l'on a fait pour chacun d'eux et de faire périodiquement des recensements dans toutes les régions.

Qu'on me permette de citer encore l'œuvre de la Commission Florentine, pour la seule raison qu'étant la plus ancienne elle a eu le temps d'organiser son travail même pour la tutelle après le placement.

En août 1917, c'est à dire après une année et demi de travail, elle fit une première recherche des invalides dont elle s'était occupée jusqu'alors. On put ainsi constater : 1^o Combien d'invalides parmi ceux placés étaient encore au travail. 2^o Quelles étaient les améliorations obtenues dans leur situation soit au point de vue économique, soit à celui de leurs aptitudes au travail. 3^o Combien parmi ces invalides n'étaient pas contents de leurs conditions et désiraient entrer dans une maison de rééducation pour une nouvelle orientation professionnelle.

Cette expérience bien que faite en proportions réduites nous apprend combien il était utile de rechercher de temps en temps nos

protégés et nous espérons pouvoir le faire régulièrement et avec les moyens nécessaires, de façon à n'en laisser échapper aucun.

Avec ceci on passe de l'exposition de ce qui a été déjà fait, à la conception de ce qu'on pourra faire et de ce qu'on fera. Il ne sera pas inutile de profiter de ce congrès pour signaler deux questions pour l'avenir. Je veux dire la question du travail temporaire dans les établissements industriels et la question de l'émigration.

En général les établissements industriels qui prennent des nouveaux venus et des apprentis mettent comme formule à leur contrat *pour la durée de la guerre*. Ceci semblerait devoir produire un chômage assez inquiétant le jour où les soldats actuellement aux tranchées reviendront chez eux, étant donné aussi l'état abandonné de certaines industries qui ont été interrompues par la guerre et qui ne pourront être reprises aussitôt après. Cependant cela ne doit pas nous inquiéter outre mesure. Malheureusement il y aura dans les équipes de travailleurs qui reviendront du front des lacunes qu'il faudra combler, et surtout nous croyons que le magnifique essor industriel de l'Italie pendant la guerre n'est pas destiné à une fin, mais qu'il va se transformer en passant de l'état de guerre à l'état de paix. D'autre part nous pouvons déjà signaler des initiatives pour la formation de maisons d'industrie et de commerce créées exprès pour donner du travail aux invalides de guerre et elles semblent être destinées à bien réussir.

La question de l'émigration doit être considérée pour les invalides qui s'étaient spécialisés en certaines industries agricoles, de construction ou de manufacture, surtout en Amérique. Ces bons Italiens, qui sont accourus à l'appel de leur patrie en danger, voudraient souvent, malgré leur infirmité, tenter de nouveau la voie où ils s'étaient engagés avant la guerre. Souvent aussi dans le pays où ils avaient émigrés ils gardent un cercle de relations plus intime même qu'avec la famille restée au pays. Certaines lois sanitaires réglaient avant la guerre l'admission des émigrants dans les pays d'outre-mer. Il serait peut-être opportun de revoir cette législation et d'établir des accords pour faciliter partout le travail à ceux qui étant de bons ouvriers avant la guerre peuvent et veulent encore faire honneur à leur patrie hors de ses frontières. Nous sommes sûrs que, *partout*, après cette guerre qui a réuni tous les peuples civilisés dans une seule lutte pour un seul but, on accordera aux soldats qui ont donné à notre cause leur belle jeunesse toute la sympathie et la reconnaissance qui leur sont dues.

SECTION 3, A.

Medical Treatment, the Blind and the Deaf.

HOME OF RECOVERY FOR SHELL SHOCK CASES.

BY SIR JOHN COLLIE, M.D.

*All cases of functional nervous diseases discharged from the Army come before the Special Medical Board, Lancaster Gate, London, or one of its branches, and it is the duty of this Board to examine the men, assess their disability, and select those whose condition requires institutional or other treatment. Much judgment and discretion are necessary to specify which form of treatment is most likely to prove of greatest service in any given case.

Up to the present we have relied for treatment chiefly upon our homes of recovery. Of these homes the first to be instituted was that at Golders Green, London, N.W., where much useful work has been done. We are also attacking the problem in another direction, *e.g.*, by means of psychotherapeutic outpatient clinics. It has been made abundantly clear that neurasthenic patients do not do well in their own homes where they are surrounded by the wrong sort of sympathy and possibly domestic worries. The first home of recovery at Golders Green was opened on the 31st May, 1917, with 100 beds, and this is now extended to 140 beds.

Since October 1st, 1917, 245 patients have been admitted, and the results have been highly successful. Since that date 196 patients have declined admission for various reasons, as, for example, a dread of further hospital treatment (many have been in hospitals for many months prior to discharge from the Army), the reluctance to leave home and family, or, in some cases, to the fact that the men have found some employment and prefer to continue at work.

During the seven months from October, 1917, to April, 1918, inclusive, 246 patients were discharged from the first home of recovery, and of these 190 were able to work, and of the remaining 56, 32 were found to be unsuitable for treatment; 17 resented treatment—these cases are always hopeless; 3 left for good family reasons, and 4 were discharged for disciplinary reasons.

Of the 190 who derived benefit, 7 attained the pre-war standard, one was fit for work, but needed training in lip-reading, 39 were fit for employment but preferred to make their own arrangements, 69 returned to their former employment, 45 went to new work found for them by the authorities at the home, and 29 left to be trained in skilled trades.

The principle guiding the treatment at Golders Green is to use every effort to change the patient from a morbidly introspective

man to one of normal mental outlook, and to make him fit to bear the strain of life. That this principle is correct is proved by the fact that so large a proportion of the patients do return to work, and become again useful citizens.

It is a curious and interesting fact that success largely depends upon the first interview between the Medical Superintendent of the home and the patient. This interview takes place immediately upon the man's arrival, and may last an hour or more. The man is encouraged to give the Superintendent his full confidence, to relate in minutest detail all his troubles and worries, and generally to feel that the doctor is a friend to turn to for help.

The patients are encouraged to take a personal interest in the welfare of the home, and to take up some form of light, congenial work. They are put on "their honour" to use every effort to bring about their own cure.

The importance of work as a remedial agent cannot be emphasised too highly. A neurasthenic *never* recovers until he has some other occupation for his mind than his introspective thoughts. The forms of work offered to the patients at Golders Green are (1) engineering, (2) carpentry, (3) basket-making, (4) bootmaking, and (5) intensive culture in the French garden, also ordinary gardening. Of these carpentry is the most popular, and it is in this branch that the men work the longest hours.

The hours worked in the workshops during the seven months October, 1917, to April, 1918, inclusive, are as follows:—

Engineers,* 3,221; carpentering, 8,099; basketwork, 3,066; boots,† 855; garden, 3,246—total, 18,487.

The successful carrying on of such a home depends upon many considerations. Firstly, it is essential that the medical superintendent shall be a "strong" man, and keenly enthusiastic in his desire to help the men, capable of winning their confidence and of being to them a guide, counsellor and friend. Secondly, that there shall be an officer who will undertake the purely administrative details and relieve the medical superintendent of everything but his exacting medical duties. He should help in maintaining discipline; for the patients should not feel too much that the doctor is a disciplinarian, if so, his influence on the men may be diminished. Thirdly, that the whole staff, sisters and nurses, shall work together harmoniously, and pull together as one team, and fourthly, that their efforts shall be assisted by the patients, who must take a personal interest in the welfare and tone of the institution. Indeed, it is essential that if even one patient resents treatment (and such cases are not uncommon, owing to the nature of their disease) he shall be removed, for his malign influence will assuredly affect the smooth working

* Engineers' shop was closed for 10 weeks, February to April.

† Bootshop only opened April 1.

of the entire home. At Golders Green the patients co-operate very heartily in the good management of the institution. They have their own Committee for organising games, &c., and adopt their own methods of discipline, as, for instance, sending "to Coventry" any inmate who offends against their view of what are the canons of good taste. Everything in the environment of neurasthenic patients must be redolent of hope; the men must see their comrades improve day by day and week by week, and in this way gain confidence that they also will improve. One case remaining stationary does much harm.

Hypnosis is not used at Golders Green as a means of treatment, because it has been found to be of little value in the treatment of such cases. In the hypnotic state a man may easily be induced to use limbs which are functionally paralysed, but it has been found that it is difficult to get the patient to continue to do the same on his return to ordinary consciousness.

Hypnosis has, therefore, been replaced by a system of re-education—the man is encouraged to make the necessary effort, first with and afterwards without assistance, just as one might teach a child to walk.

What may be described as rapid cures are unknown at Golders Green. Real and enduring cures take several weeks. There are many cases where a man has been brought to the home in a bath-chair, not having walked for months—and within a few minutes has been induced to walk upstairs. But that is *not* a cure, for without unremitting attention and encouragement he soon relapses into his former condition.

Our second line of attack is, perhaps, the most hopeful, because it has the great advantage that it can be taken advantage of whilst the men are following their employment. Originating as an off-shoot of the Special Medical Board for Functional Nervous Diseases, a clinic for the out-patient treatment of neurasthenia has been established at Lancaster Gate, London, and the results have been entirely satisfactory. It is found that the men appreciate the treatment whole-heartedly, and that no difficulty is found in securing their regular attendance.

There have been many striking cases at the clinic, and the following are of special interest:—

An officer, who was discharged from the Army under very distressing circumstances, was exceedingly emotional when first he attended the clinic, and talked much of suicide, frequently bursting into tears. After a short course of psychotherapeutic treatment his attitude entirely changed, he rapidly progressed towards recovery, and is now doing good work.

A man, who had several flesh wounds of the calf, could not put his heel to the ground, and had not done so for two and a half years. He walked very badly as the result. There was a contracture of the leg muscles. Ordinary

remedial treatment had been of no avail. In the gymnasium attached to the clinic, after five hours' treatment, the leg became normal, and has remained so since.

A man, who had been in the retreat from Mons, was brought to the clinic in a wretched condition. For more than three years he had sat all day in a condition of stupor, and during the night used to to walk in his sleep. His friends proposed to put him in an asylum. At the clinic the cause was found to be shock caused by a German atrocity. After two attendances he began rapidly to improve, his incoherent speech became normal, he declared himself better than he had been since he joined the Army. He is now in the best of health.

The success of this line of treatment has been so great that already we must take steps to increase our staff of doctors to cope with the work, and the day is not very far distant when other clinics must be started in London and in the Provinces. Indeed, it is my hope that we shall have a clinic for psycho-therapeutic treatment in most of the large towns.

SUR L'ORGANISATION DE L'ASSISTANCE MILITAIRE NEVROLOGIQUE EN ITALIE, AVEC RAPPORT SPECIAL AUX "CENTRI NEUROLOGICI" ET EN PARTICULIER AUX "PADIGLIONE BIFFI" A MILAN.

PAR PROF. E. MEDEA (Milan).

Le Prof. Tamburini de Rome, nommé, dès le commencement de la guerre, inspecteur-général des services neuro-psychiatriques, a publié dans le mois d'août 1916 (*Rivista sperimentale di freniatria*, Vol. XLII, Jan. 1) un article sur l'organisation du service neuro-psychiatrique de guerre en Italie. Dans cet article on parle des "Services neuro-psychiatriques des Armées" (*Reparti nevro-psichiatrici delle Armate*), des "Services neuro-psychiatriques de l'intérieur" (*Reparti psichiatrici e nevrologici delle zone territoriali*) et aussi de l'institution des "centres nevrologiques" (*Centri nevrologici*) qui à cette époque étaient en fonction seulement dans 8 villes d'Italie, loin du front.

Je vais, dans mon rapport, donner très rapidement un aperçu de l'organisation des "Centri nevrologici," telle qu'elle est actuellement, tout en me permettant de faire remarquer que le premier de ces "Centri" en ordre de date a été celui que j'ai l'honneur de diriger à Milan au Pavillon Biffi et qui a commencé à fonctionner régulièrement depuis le mois de juin 1915.

Maintenant presque dans chaque Corps d'Armée on a institué un Centro Nevrologico qui reçoit les blessés du système nerveux central et périphérique et les soldats qui présentent des troubles fonctionnels du système nerveux soit d'ordre général (hystériques, neurasthéniques, etc.), soit partiels (paralysies contractures, formes physiopathiques du type Balinsk-Froment). Naturellement ces Centri sont organisés un peu différemment selon les différences dues aux conditions du lieu où ils se trouvent, mais général leur fonctionnement se fait de la façon suivante :

Chacun des centres a un service pour neuro-organiques blessés et pour fonctionnels : en général ces deux sortes de malades sont divisés dans des hôpitaux différents ou dans des services séparés dans le même hôpital. Dans quelqu'un de ces centres, comme, par exemple, au Padiglione Biffi, on reçoit et on traite aussi les maladies nerveuses organiques des militaires qui sont tombés malades pendant le service au front. Ce qui caractérise surtout les *Centri Nevrologici* c'est leur particulière physiologie neuro-chirurgique : soit dans le même bâtiment soit par des arrangements avec des hôpitaux contigus, le névrologiste directeur du centre a la possibilité de se servir des rayons, dans un but diagnostique et éventuellement thérapeutique et de faire opérer ses malades par un ou plusieurs chirurgiens spécialisés pour

les interventions chirurgiques le cerveau, la moelle épinière, les nerfs périphériques. C'est sur l'entente parfaite entre le neurologue et le chirurgien que repose la sûreté du succès dans le traitement des blessés du système nerveux ; le neurologue doit toujours donner, après un examen minutieux, son conseil au chirurgien à propos de l'intervention et doit toujours être présent à l'opération. En effet ses connaissances physiopathologiques et l'étude qu'il a faite du malade lui permettront toujours de donner au chirurgien des conseils très utiles pendant l'opération même.

Malheureusement je n'ai pas eu le temps de recueillir des renseignements sur le fonctionnement particulier de chacun des *Centri*, mais je peux dire, ayant visité plusieurs d'entre eux et possédant des nouvelles assez détaillées des autres, que partout leur fonction est très utile et que les résultats répondent à ce que la Direction de Santé Militaire espérait d'obtenir avec leur constitution. Ces Centri actuellement en fonction sont les suivants : (1) *Rome* avec deux Sections : organiques à l'Hôpital de Mérode (Prof. Bastianelli) et fonctionnels à la splendide Villa Wurts ou Gianicolo (Prof. Fabrizi) ; (2) *Milan* avec deux Sections, chacune desquelles a un service pour organiques et pour fonctionnels : l'une est dirigée par le Prof. Besta, l'autre par moi. Chacun de nous a son chirurgien de choix, respectivement les Proff. Bossi et Crosti, et je crois de pouvoir assurer que le fonctionnement du Centre Neurologique de Milan dans ses deux Sections est régulier et satisfaisant ; (3) *Pavie*, dans le Collège Borromeo, un Centre très bien organisé, dirigé par un de nos plus grands savants, mon cher maître, le Prof. Golgi, avec l'aide d'un neurologue, le Prof. Sala, et d'un chirurgien, le Prof. Verza ; (4) Un nouveau Centre vient d'être installé à *Gênes* (Prof. A. Morselli) ; (5) *Sienna* a un Centre dirigé par le Prof. Fragnito qui sert pour la Toscane et Emilie ; (6) le Centre d'*Ancona* est dirigé par le Prof. Modena ; (7) le Centre de *Bari* est dirigé par le Prof. Boschi ; (8) le Centre de *Naples* par le Prof. V. Bianchi ; (9) le Centre de *Catania* (pour la Sicile) par le Prof. d'Abundo. Il y a encore à rappeler l'existence de Centres de première concentration à Milan (Boveri), à Bologne (Neri), à Reggio Emilie (Consiglio). Les événements de la guerre ont déplacé le Centre de *Treviso* (Gatti) et de *Ferrara* (Boschi).

Naturellement je m'occupe ici seulement des fonctions neurologiques sans parler du service psychiatrique qui est en général assez bien organisé dans les Asiles d'aliénés de chaque province.

Le Prof. Golgi, avec les Proff. Sala et Verga, vous parleront de l'organisation vraiment remarquable du Centre de Pavie ; je vous parlerai très rapidement du fonctionnement de mon service, le Padiglione Biffi de Milan avec ses annexes. Le service est divisé en trois sections : le Pavillon Biffi pour blessés neuro-organiques plus sérieux, l'hôpital de S. Sofia pour organiques moins graves, le Ricreatorio S. Carlo pour fonctionnels. Le pavillon Biffi qui fonctionnait déjà avant la guerre comme service neurologique civil de l'hôpital Majeur de Milan, est doué de plusieurs laboratoires pour recherches sur le liquide rachidien,

pour l'étude hystologique du système nerveux, pour grandes coupes du cerveau, microphotographie; un autre laboratoire sert pour l'ergographie, la graphique des tremblements, des réactions vasomotrices (gant de Patrizi) etc., etc.

Au point de vue thérapeutique, deux salles d'hydrothérapie avec tous les appareils nécessaires, plusieurs appareils pour l'électrothérapie dans ses formes différentes (faradisation, galvanisation, courants sinusoïdales; arsouvalisation, franklinisation, bains électriques, etc., etc.). Tous ces appareils ont été construits en Italie et précisément l'installation hydrothérapique à Pavia, l'électrothérapique à Milan. Une installation mécano-thérapique, suffisante pour un service de névrologie, a été ajoutée dans ces derniers mois. Nous avons tous les appareils pour les méthodes de rééducation à la Frenkel, etc.

La possibilité de faire un grand nombre d'applications électrothérapiques à la fois nous permet de donner un grand développement au traitement ambulatoire de plusieurs blessés qui suivent le traitement tout en restant chez eux en licence de convalescence, dans le but de ne pas occuper un lit inutilement les blessés organiques des nerfs des bras par exemple sont traités en grande partie ambulatoirement; au contraire je tiens toujours dans l'hôpital pendant le traitement les fonctionnels pour des raisons trop faciles à comprendre.

Il faut maintenant donner quelques renseignements sur les résultats obtenus dans mon service. En commençant par les cas de neuro-chirurgie, je dirai seulement les conclusions auxquelles l'expérience de ces années de guerre nous a autorisé à arriver. Pour ce qui a rapport aux interventions sur le *cerveau*, on a opéré chaque fois où il y avait des phénomènes de compression où lorsqu'on supposait l'existence d'une leptoméningite où aussi d'une partie—où d'une leptoméningite ou aussi d'une méningo-encephalite circonscrite. A propos des esquilles osseuses ou métalliques, nous insistons encore une fois sur la tolérance du cerveau envers les esquilles métalliques: au contraire les esquilles osseuses sont toujours dangereuses et il faut les enlever le plus tôt possible (abcès tardifs etc.). Dans plusieurs cas où il y avait perte de substance crânienne, le prof. Crosti a pratiqué assez souvent la cranioplastie (méthode autoplastique de Leotta) avec de bons résultats.

Les interventions sur la *moelle épinière* ont été faites chaque fois où il y avait la possibilité de porter le diagnostic d'une compression (esquilles osseuses ou métalliques etc.) ou d'une lésion partielle de la moelle (méningite sérieuse traumatique avec formation de cystes, partie ou leptoméningite etc.). Il faut dire qu'on a le devoir d'opérer chaque fois où l'on a la persuasion que la lésion de la moelle ne soit pas complète: pourtant il faut avouer que les lésions de la moelle sont parmi les plus tristes de la guerre.

Nous avons eu à soigner un grand nombre de cas de lésions des *nerfs périphériques*: plusieurs de ces cas se sont améliorés par le simple traitement électrique: pour les autres il faut toujours

étudier dans tous les détails le cas avant de le proposer au chirurgien pour l'intervention et il faut toujours exciter le nerf découvert soit électriquement soit mécaniquement pendant l'intervention, pour donner au chirurgien des conseils sur la modalité de l'opération (névrolyse résection etc.).

Avec ces précautions diagnostiques et opératoires, on aura la possibilité de faire toutes les opérations nécessaires, de ne pas faire d'opérations inutiles et de faire ce que réclame vraiment l'état du nerf blessé.

A propos des fonctionnels, sans parler des cas plus simples de contracture ou de paralysie hystérique, il faut attirer l'attention sur les cas nombreux du type *physiopathique* (Babinski et Froment) : à propos de ces cas nous croyons à la possibilité d'obtenir des améliorations et des guérisons pourvu que les malades ne soient pas envoyés trop tard, qu'ils ne soient pas immobilisés pour un temps trop long, et que l'on s'occupe beaucoup d'eux.

Nous voulons ajouter que nous donnons à tous les soldats qui en ont besoin des appareils pour empêcher les positions vicieuses des membres (appareils pour les paralysies du radial, du péronier etc.).

La rééducation a une grande place dans mon service : c'est surtout à travers le travail, bien dosé et organisé dans un but médical, que la rééducation s'accomplit : les soldats tressent des paniers, font des pantoufles, des réseaux pour camouflage etc. Les travaux en petites perles ont pris un grand développement, qui servent très bien à exciter les malades à faire des petits mouvements, et à développer leur goût artistique, et qui, en leur permettant de réaliser un avantage matériel assez considérable, sont de grande utilité pour l'ordre, la discipline etc.

Dernièrement nous avons organisé un atelier pour reliure des livres qui donne de très bon résultats.

Dans notre service nous avons introduit aussi l'instruction élémentaire pour les malades qui, à cause du traitement doivent rester quelques mois à l'hôpital, et les succès obtenus par nos élèves sont des plus satisfaisants.

Nous voulons bien faire comprendre que les travaux et les laboratoires institués dans notre service ne doivent pas être confus avec les laboratoires pour mutilés, estropiés etc., qui se trouvent, pour Milan, à l'Institut de rééducation de Gorla (Prof. Galeati). Nos laboratoires sont destinés aux malades pendant le traitement et ont un but de rééducation de la volonté, des groupes musculaires etc., les laboratoires de Gorla ont pour but de faire apprendre aux mutilés, estropiés etc., un métier nouveau qui puisse leur servir dans la vie.

Nous savons que la Direction de Santé Militaire a l'intention d'ouvrir, près de chaque Centre neurologique, une Maison de travail destinée surtout aux soldats qui présentent des troubles

fonctionnels et à propos desquels on a noté le danger de les envoyer en licence de convalescence, car on a vu une quantité de rechutes dans ces cas.

Nous croyons que l'institution de ces Maisons de travail, surveillées par des officiers intelligents et énergiques et toujours tenues sous une direction névrologique, pourra donner de bons résultats.

Nous insistons pourtant encore ici sur un point que nous croyons très important : il faut que les blessés du système nerveux, organiques ou fonctionnels, soient envoyés aux " Centri Neurologici " le plus tôt possible, sans passer à travers une quantité de formations hospitalières où ils ne peuvent pas être suffisamment bien diagnostiqués et traités : pour les fonctionnels surtout il faut dès le commencement les diagnostiquer et les placer d'une façon appropriée, sans quoi on perd du temps précieux et on permet la stabilisation de manifestations très difficiles à vaincre dans les hôpitaux de l'intérieur. Nous sommes d'avis à ce propos de tenir le plus près possible du front les fonctionnels sans manifestations psychiques générales graves (contractures, paralysies partielles, etc.) ; ils guériront beaucoup plus rapidement et plus facilement que dans les " Centri " de l'intérieur pour des raisons assez faciles à comprendre.

THE NEUROLOGICAL CENTRES IN ITALY.

By Professor CAMILLO GOLGI, Director of the Neurological Centre at Pavia.

(Translation.)

In order to accomplish the task entrusted to me—that of making a brief *exposé* of all that has been achieved in Italy with regard to the development and organisation of the so-called Neurological Centres—I must begin by a description of the Neurological Centre of Pavia, that I have the honour of directing.

Setting aside any personal reason connected with the responsibilities I have assumed with regard to the assistance of our wounded soldiers, this Centre of ours has a special claim on my attention, if for no other reason, because the methods adopted for its development and organisation have caused it to be accepted as a model for all other institutions of this kind that have since been founded by our Government.

It may be said that Pavia started having a Neurological Centre for the treatment of all wounds, and their effects, in any way are connected, directly or otherwise, with the nervous system, from the very beginning of our war. Within three or four months of this event, there already existed a veritably specialised section of this kind, at the time that the Borromeo Institute acted as generalised hospital.

The constitution of this rudimentary section was accomplished without any settled idea of making a Centre of it for the treatment of said wounds; it was done with the sole object of providing, when required, for the treatment of individual cases, as they came along, profiting by all that was being done elsewhere for these wounds, especially in England and in France, and of the results of the experimental science (laboratory observations, and also clinical observations) on the subject of the regeneration of the nerves.

During these three years of work, in the course of which the special categories of the afore-mentioned wounds were multiplying, the Neurological Section of Pavia continued to specialise, as is indicated in the title conferred on it of “Neurological Specialising Section.” But, as a result of this increase in the quantity as well as the quality of the work, this institution not only had to be gradually enlarged, until it could accommodate about 450 patients, but it also had to modify its organisation; said modifications culminated with the constitution of the present “Neurological Centre” (Ministerial Circular Letter, January, 1918), which is sub-divided as follows:—

(a) The Neuro-Organic Branch;

(b) The Branch for the Mental and Neuro-Functional Maladies.

Later indication of its developing in other and even more special directions are shown by the Ministerial Circular Letter referring to the institution of the physio-therapeutical centres of the army corps, for the treatment of temporarily disabled soldiers. In this letter the Government sets forth in detail all the regulations relative to the constitution and organisation of said centres.

The creation of these new centres was the consequence of the necessity that had arisen of providing with all the possible means suggested by science and by practice for the training and functional recovery of those soldiers who, as a result of wounds received at the front, were suffering from a diminution of their physical powers.

This important administration, known as the Physio-Therapeutical Centre, has been constituted as follows:—

I°. Hospital Section :

- (a) Neuro-Pathological Branch;
- (b) Branch for Orthopedical Surgery.

II°. Physio-Therapeutical Department.

III°. Meccano-Therapeutical and Electro-Therapeutical Department at the disposal of the other Branches.

I am able to state, with particular satisfaction, that the scientific organisation of this complex institution has been achieved by means of our obtaining the collaboration of eminent men belonging to our University (Pavia).

I will limit myself to mentioning the neuro-pathologist, Professor Guido Sala, one of the most eminent neuro-pathologists in Italy, and the surgeon, Major Professor Giovanni Verga; the latter is a young man that has won high renown as a result of his writings, that are of interest not only from a scientific, but also from a surgical, point of view.

I will only say a few words of a general character with regard to the special sanitary scientific organisation of the Neurological Branch (Borromeo Hospital).

It is useless to dwell on the truth of the universally accepted principle, that the treatment of the effects of nervous wounds demands "a close collaboration of the neurologist with the surgeon." This fundamental principle is not only strengthened by our daily experience, but it has further proved that in the action of the surgeon and of the neurologist there must exist something more than the plain collaboration, in the sense generally attributed to this word. This "something more" is, in my mind, ideally stated by the imagery of our colleague, Professor Burci: "in the work of the neurologist and of the surgeon devoted to the treatment of the effects of nervous wounds," he said, "there must exist a true symbiosis." All those who have occasion to observe the clinical manifestations of such wounds, and eventually to summarise the salient points of the resulting operation, must inevitably realise how true is the conception of the psychological amalgamation existing between

the neuropathologist, who carries out his diagnostic analysis on the basis of the most precise anatomical knowledge, together with the certainty as regards the physio-pathological characteristics of nervous wounds, and the surgeon who not only must be thoroughly grounded in anatomy and in the physio-pathological laws that refer to the nervous system, but must bear in mind the not infrequent changes that may impose themselves during the performance of the primitive plan of operation, and the corresponding need that may arise for creating unforeseen operatory expedients. I do not hesitate in affirming that the conception of "symbiosis," expressed by our colleague, Burci, is ideally personified by the afore-named colleagues.

All the work that has been done during the past three years in the Neurological Branch (Borromeo Hospital) has been gone into by both my colleagues Sala and Verga who have described it in their special Summaries and Reports.

Whilst I note the intensity and importance of all that has been accomplished by the two eminent colleagues, the proofs of which are to be found in the number of operations performed, and of actual results that have been achieved (complete recoveries and improvements), I feel that it is not quite superfluous that I should recall the fact that one of the reasons that this Institution was able to undertake this kind of treatment from the very beginning, and that it is no small factor in the splendid results that have been obtained, that, in pre-war days, our University, and more especially the Laboratory directed by me, was specially devoted to scientific experimental studies of wounds of the central and peripheric nervous system, and more especially of the regeneration of the nerves.

These studies were recognised as being of the greatest importance by the entire scientific world, especially as they carried with them the solution of certain problems connected with this vital question, that for centuries had been matter of controversy.

In consideration of the enormous importance attributed to them in the scientific world, I must quote the works of Marengli, of Purpura, of Perroncito, of Guido Sala, of G. Verga, &c.

The researches of A. Perroncito come well to the fore in the history of the research on the regeneration of the nerves: his name is connected with a thorough knowledge of the most precise and demonstrative facts on the central origin of the nervous fibres, as proved in experiments on nerves that had been severed for the purpose.

These studies and experiments, as a whole, resulted in the creation of precepts that were put into immediate practice for the treatment of nerve wounds; amongst others, the necessity became evident of carefully considering the local condition of the severed nerves with regard to the development of the regenerative process, and that the operation must aim at substituting the cicatrix constituting barriers very nearly insurmountable for the fibres that reach out from the central stump, to operatory cicatrix which

will permit these same fibres to advance from the centre towards the periphery.

My attention is further recalled to another question that has ever appeared to me of the greatest importance.

I am referring to the impossibility of being able to take any surgical action (needless to say, in cases where it is needful) because of the opposition to which the soldiers resort against the performing of operations which, according to all the known principles of science and of surgery, would result either in the perfect renewal of the functions, or, at any rate, in a more or less degree of improvement.

To my mind, this argument is by no means resolved, and deserves the most serious consideration, not only from the point of view of the individual, but also from that of the interest of society in general.

As far as any special arguments in favour of this may go, I will refer to what I have already said at other sittings: "Il Reparto Neuropatologico Specializzato 'Collegio Borromeo' in Pavia," Pavia, Tipografia Cooperative, 1917.

"Per la Protezione ed Assistenza Degli Invalidi Della Guerra," Roma, Tipografia del Senato, 1917.

Finally, it may not be judged superfluous that I add a few words with regard to the economic side, connected with the special plants working in this Institution (Meccanotherapeutic, electrotherapeutic and radiologic).

I do this all the more willingly that there have been assertions made, to the effect that these plants demand enormous disbursements, most difficult to meet.

The entire meccanotherapeutical, electrotherapeutical and radiological plant did not cost us more than Lit. 60,000; and this was for a set of machinery which, according to the unanimous opinion of the technical commission, is excellent from every point of view, and thoroughly adapted to every scientific and practical need.

*Summary.***"THE NEURO-ORGANIC SECTION OF THE
NEUROLOGICAL MILITARY CENTRE AT
PAVIA."**

BY PROFESSOR GUIDO SALA, Chief Neurologist of the Neuro-Organic Section, Neurological Military Centre of Pavia (Directed by Senator Prof. C. Golgi).

This special Section, which has been organised as the Specialised Neuropathological Section ever since October, 1915, has been gradually enlarged to the point that, at the present day, it can receive over 430 soldiers for treatment of the wounds and organic affections of the central and peripheric nervous system.

This Section, conformably with the orders of the Ministry of War (General Direction of the Military Board of Health) is set aside for the soldiers belonging to the Army Corps districts of Alexandria and Turin (Piedmont), and is also used as a first grade section for observation and selection. The institution contains all the most modern appliances for physical therapeutics which are required for diagnosis and for the treatment of the different diseases to which the nervous system is subject. There are the several halls for radiological and electrodiagnostical examination, and for electrotherapeutical treatment, as well as convenient operating theatres, where operations are performed on peripheric nerves and the central nervous system.

The electrotherapeutical plant consists of :—

- 6 complete fittings for galvanic current and for faradic current, connected with accumulator batteries.
- 8 complete fittings for electrical baths.
- 1 complete fitting for synucydal current.
- 1 complete fitting for high voltage current.
- 1 complete fitting for diathermia.
- 1 complete fitting for undulating current.

All the machinery and the appliances constituting this plant are of home manufacture with the exception of the appliances for diathermia (D'Arsonval System, from Messrs. GaiFFE, of Paris).

The electrotherapeutical cabinets are working regularly every day without interruption, as they also serve the purpose of ambulatory service for the soldiers who have been taken into other Sections in this city and for soldiers on convalescent leave. On an average the cases treated amount daily to 350. This

therapeutical treatment is attended to by a trained staff under the continual supervision of the Director of the Section; the latter is also in charge of all the neurological and electro-diagnostical examinations.

From the very beginning it was considered absolutely indispensable that the surgeon and the neurologist should act in strict collaboration in all that concerned the surgical treatment. It has thus been possible to perform numerous surgical operations on the nervous system, especially on the peripheric nervous system (over 200) with most satisfactory results. (*See Report in Extenso of my colleague, Prof. Verga.*)

Every effort has always been made to avoid surgical treatment for such cases where there might be the remotest chance of success with an appropriate treatment of physical therapeutics. Indeed, in a great number of cases, as was to be foreseen, most satisfactory results were obtained by means of special therapeutic treatment happily blended (electrotherapia, meccanotherapia, diatermia, medical gymnastics, hot baths, massage, strychno-arsenical treatment, &c.).

These therapeutic treatments proved especially useful with regard to dystrophic processes and to paralytic conditions that were more particularly due to inertia, for patients that had been kept motionless, often most inopportunately, for long periods of time, their limbs encased in immovable appliances. In such cases, also, where the diseased parts were supported by a direct lesion of the nerve, especially if parcelled, very good results were obtained, especially when it was possible to begin the treatment in good time, with a rigorous method and for a sufficient period of time.

The application of simple, light and economical prothetical appliances (model of Prof. Sala) have proved most beneficial; these are used for correcting any impotency of movement and to aid the renewal of muscular functions in paralysis of the radial nerve and of the popliteal external sciatic nerve. Several hundreds of these appliances have been set up and utilised.

The most numerous wounds were those connected with the peripheric nerves (1,400).

The nerves that were attacked the most often were, in their order of frequency, the radial nerve (298), the cubital nerve (249), and the middle nerve (239) for the upper limbs; the sciatic nerve (269) for the lower limbs.

Were also to be noted the wounds of the brachial plexus (64) and of the sacral-lumbar plexus (15); wounds of the sympathetic cervical (7), and a notable series of cerebral lesions (201), and medullar lesions (72), of traumatics and of wounds and cerebro-spinal illnesses.

Amongst the soldiers having cerebral lesions there were 20 cases of convulsive abscesses of a Jacksonian and generalised type, and 5 cases with forms of abscesses.

In spite of the gravity of such cases, a good number of these soldiers were discharged in a notably improved condition.

Another special category of traumatised subjects of the nervous system are those men that are suffering from paralysis and from contractions of several kinds, and of a so-called reflex nature (200), the result of wounds that were often of very small account and, for the most part, not affecting directly the nervous system. For these men all the treatment up to now has not proved very efficacious, unfortunately, but new methods are now being studied in this section in the hope of obtaining somewhat better results.

SUGGESTIONS AS TO THE BETTER TREATMENT OF OUR WAR NEUROSES.

BY LT.-COL. J. W. SPRINGTHORPE, A.A.M.C.

We entered upon this, the greatest war of all time, with enough of nothing; with the call "enlist," not "serve"; with seniority above efficiency; with a machine that followed tradition and compelled delay; with all other claims subordinated to the military; and with a medical profession uninstructed in psychology, and, in most cases, unacquainted with psychopathic manifestations or their proper treatment. Is there any wonder that when we came to deal with the great question of war neuroses we made many and serious mistakes, and that, despite magnificent work in many quarters, very much still continues unsatisfactory, and will so remain until these basal factors are suitably dealt with.

We have gradually learnt that not only are there not infrequent conditions which can and do seriously upset even the soundest mind in the soundest body, but, also, that people of a recognisable psychopathic constitution, even when not patently unfit to be mobilised for active service, give way sooner or later—generally sooner—under the strain, the infection, the emotional stress, or the unprecedented concussion of this war. We have also come to see that the phases and degrees of disability are so complex that they demand expert differentiation; that many—probably the large majority—of the seriously affected become unequal to a repetition of the strain, and that delayed or unskilful treatment perpetuates many symptoms, and even produces new ones. And we have also found that the number so disabled is exceedingly large, and that the difficulties in the way of their best care and treatment, and of estimating the duration of their disability and degree of their restoration are exceedingly great.

In the face of a situation so grave for both individual and community, we ought to ask ourselves the question: "Are we doing all we can to minimise the loss and the cost?" This paper aims at stating what seem to be some of our present defects, and at suggesting some of the apparent remedies.

1. Preventatively we should make universal the motto "Serve" as the method of response to the call of duty, and grade all, both those who have enlisted and those who have not, according to their best suitability. Then no longer would men of marked psychopathic constitution find their way into our firing line in such numbers, whilst others, admitted by mistake, would be promptly removed prior, and not subsequent, to their almost inevitable breakdown. This would mean not only an official classification as to what class of psychopaths should, and what class should not, be kept out of active service, but also a sifting

after entry, with consequential removal to some suitable form of Home Service. Have we done either satisfactorily up to date? I think not.

Further, no one who has had experience would, I am sure, deny that cases of actual breakdown would be fewer and less serious if the psychopaths and neurasthenics, who have gained entrance, were more individually "placed" and trained, and more frequently rested than has hitherto been the custom. I am aware that this trenches upon military ground, but I am one of those who venture to hold that the net result would often be better if the medical position were more frequently and more forcefully brought under the notice of the High Command.

2. For the best results, it is self-evident that, prior to proceeding to their units, the M.Os. should have—as some officers in other departments now have—such training and experience as will fit them to recognise and deal with the various phases of nervous vulnerability, and be provided with some official form along which to classify and some guiding principles along which to act. So far as I know no such training, experience, classification or form are as yet provided. What an increase in general and personal efficiency, what a prevention of unnecessary disability are not hidden here? Similarly, the special hospitals to which the "N.Y.D.N." class of cases are now sent should be sufficient for all requirements, be staffed by specially qualified medical officers, and should have in operation one uniform approved method of history-taking whereby all pertinent facts, phases and combinations, with sequence, severity and duration of symptoms might become an invaluable record for future reference. So far as possible, also, such hospitals should be away from the region of air raids, bombing, and excessive gun-fire, and certainly no excitable patient should remain longer therein than is necessary for due examination and record. Are all these ancillary methods in satisfactory operation? I am afraid not.

3. Subsequent treatment is even more important, and even more unsatisfactory. Some fortunate patients proceed by special "green and white" tickets, or the like, to special hospitals at the Base, or in England. But how many do not? And why not all? In many cases, as I know from sad experience, patients specially diagnosed become practically lost in the forest of general hospitals for periods ranging up to four to six months (and in hundreds of cases, averaging over three) where general—shall I call it, unobservant neglect, often takes the place of that individual expert attention, which makes all the difference in duration and prognosis. The results are often disastrous. Is not the continuance inexcusable? Other cases, apparently less fortunate at the beginning—because less expertly diagnosed—are even more unfortunate in their subsequent progress, and lay *perdu* in all sorts of places, under all sorts of non-neurological diagnoses and treatment, in numbers that are probably never known in their entirety, but that, even as known, are said to be in Germany "more frequent in the general wards of military hospitals than in the special nervous hospitals." And if more

frequent in Germany, probably still more frequent amongst us! Is there any reason why this should be? If sufficient special hospitals cannot be provided, why not special wards in specially selected general hospitals, where accurate diagnoses and suitable treatment can be adopted? Without entering into principles or minutiae, it may be claimed that treatment should be individual and expert—that nothing less should be deemed satisfactory—and that whenever the hospital is one in which the patient is to stay for any time, the necessary grounds, physiotherapy, workshops, amusements, &c., should be provided. As I write this, I have just admitted a patient, 85 days after his shock, with, throughout, amidst other marked neurological symptoms, almost complete amnesia of his prior existence, who has been passed through six hospitals on the diagnosis of “P.U.O.” and “trench fever,” and who was never even questioned as to his memory, or treated for other than his fever! The case is typical of many others. What are we doing to lessen them?

4. The future of the patient is often still by no means satisfactorily settled. There is, I believe, a general consensus of medical opinion that all cases of definite “shell shock” and many of concussion, psychasthenia, hysteria, &c. (especially if markedly increased by the stress of war) should be dealt with as permanently unfit for Active Service, whilst other and lighter forms of neurasthenia, &c., may be regarded as fit for Home Service after a variable period. But in the present confused state of nomenclature and classification, no general rule can be formulated, nor uniformity of action adopted. We need some general form of nomenclature and classification, and some general official announcement thereon.

There is also apparently a growing consensus of opinion that no case of functional nervous disease should be discharged from the Army until both his medical and social status have been finally determined, and that great loss is likely to accrue to both State and individual whenever this rule is departed from. And yet the present War Office dictum is: “Discharge as soon as possible”! If we, as experts, hold the opposite view, is it not incumbent upon us to place the non-military situation fairly and squarely before the authorities?

5. *Pensions*.—Surely the proper way to regard Pensions is as the immediate financial side of Reconstruction or Repatriation (to use the Australian word). As such, they are fundamentally bound up with questions of treatment and training, and the sound principle is that of the alternative award in which the determining factors are the pre-war earnings, and the present earning capacity.

Speaking generally, a Pension should be a statutory right, and not a mere grant. This is already the case in compensations for industrial disabilities under the Employers' Compensation Act, and much good, both direct and indirect, would inevitably follow a change of terminology in the case of disabilities incurred in war. Are not the war sufferers at least equally deserving?

It is claimed, further, that a low pension favours dissatisfaction, that a high one discourages re-education, and that no pension is best, with, in its place, upkeep during reconstruction and a grant at the end. The ideal, of course, would be to place the man as nearly as possible in the *status in quo ante bellum*; and, if any man ever deserved such adequacy in compensation, surely it is the disabled soldier! To give an amount in accord with the average cost of keeping up the previous position, and proportionate to the difference between previous earnings and present earning capacity in the labour market, might perhaps be called a financial revolution. But, unless some such satisfaction is attained, the result, apparently, will be, present at the expense of future saving, largely increased cost of administration, reduced standards of living, less number of marriages, deterioration of home life, and smaller and less capable posterity. It is estimated that in 1918 the actual British pensions will amount to some £23,000,000 per annum, and it is claimed that an increase of 25 per cent. would pay for the above difference. Is it not worth it? The situation is one that should be fairly faced and the best possible all-round solution arrived at.

Meantime, it cannot be denied that the present amounts are quite insufficient, especially whilst, as now, the purchasing power of the sovereign has been reduced by more than one-half; and that there should be a Court of Appeal outside the Minister, who, at present, is the sole arbiter in an appeal against himself.

The methods of distribution, also, are frequently so imperfect, slow, and at times even unjust, as to call for some change, either in the direction of enlarging the powers of the Local Committees, of altering their personnel, or of replacing them by local officials directly under the Ministry of Pensions, as is the Australian practice with satisfactory results. Nor is a final assessment universally made, as would be more satisfactory, by a Board of Experts, who should enquire into previous working capacity, temporary needs and commercial value of present earning power, of which Board, of course, there need be not more than one medical member fit to examine the patient, and gauge the value of the report presented by or from his medical attendant.

6. Reconstruction, however, should be the main, and Pensions the side issue. If carried into practice, this would mean a radical reform by the relegation of money compensation to the background, and the advance of measures of re-education and training to the foreground. It is gratifying to notice how much is being attempted, if slowly, in this direction. So far as war neuroses are concerned, we have at present three object lessons going on side by side :—

(a) As at Maghull : a special hospital, expertly staffed, but with limited training facilities, sending back to work each month some 20 per cent of its patients, who are still under discipline, though, on the average, admitted some three months, instead of six or seven days, after the date of the origin of their disability.

(b) As at Golder's Green, a "Home of Recovery," taking in patients discharged on pensions, generally without previous expert treatment, and any time up to two years after the origination of their disability, also expertly staffed, but with better training facilities. Here, during the past four months, after an average stay of 6 to 7 weeks, and at an average cost of less than £19, of 163 patients received, 37 were discharged as unfit for treatment (19 being medically unsuitable, 12 resenting treatment, 2 for family and 4 for disciplinary reasons). Of the other 126, 4 go up to pre-war standards, 1 requires only lip reading, 38 are fit for work, 46 return to former employments, 28 go to new work and 9 to training under a scheme of the Ministry of Pensions.

(c) The much larger number of outside cases, practically left to their own desires and devices, some few attending some treatment or training, as provided by Local Committees or outside bodies.

Surely it is time that some uniform scheme was adopted and some supreme control set up, so that cases might be met and activities co-ordinated, improved and extended.

7. The war neuroses present, also, many questions of prognosis, and therefore of assessment, peculiar to themselves, such as are bound up in the consideration of the headaches, the mental inertia, the confusion, the lapses of memory, the defects in concentration, and other persistent psychopathic conditions. These, however, seem matters of progressive experience and interchange of views, rather than of any present official pronouncement.

8. Finally, I beg very briefly to formulate some of the results of my own investigation of some 500 Australian cases during the past 15 months, in so far as they have a bearing upon the previous considerations.

(a) Out of 500 mixed cases (less a few with hazy recollection), 308 had a good, and 106 a neurotic family history; 253 a good, and 132 a neurotic personal history; and 207 a good, and 57 a neurotic family and personal history.

(b) Out of a series of 120 cases diagnosed as shell shock, 66 had a good antecedent, personal, and family history.

(c) In one special hospital at the front, between 29th August, 1917, and 12th November, 1917, 45 per cent. of the cases were sent back to the base, and the majority of the others were mild, and "need never have been sent to them"; in another, between 20th June, 1917, and 12th October, 1917, 824 out of 920 were evacuated to the base and 73 to duty; and in a third, between 27th September, 1917, and 12th October, 1917, 551 out of 574 to the base and only 1 to duty.

(d) In 3 series of 30 consecutive cases admitted into our hospital, the average duration of stay in previous hospitals was 88, 90 and 92 days; and in the last series 10 were over 100 days in other hospitals, with an average of 149 days.

(e) Many cases give a history of being upset by gunfire, air raids, and bombs, and similarly suffer here. Very many come in with little or no history, and under all sorts of diagnoses, and not a few, sent back after months in hospital and command depôts, break down even before they reach the firing line, or within a few days of doing so.

(f) We find, of course, most, but not all hysteroid symptoms almost magically cured within a short period, but the psycho-neurasthenic much more persistent and requiring individual treatment along many different lines (cases arriving from special hospitals being not much better than those from general hospitals). Many of the symptoms of the shell shock syndrome, also, are still present, not only on admission, but when our limited means and times of treatment are ended. Taking the view that shell shock may be, and generally is the result of emotional overthrow rather than overwhelming motivity, and that the main places of attack are the frontal lobes and the medulla, our fear is that, subsequently, many such may develop psychical epilepsy or epileptic equivalents, and already we have a number of cases of definite petit mal and post epileptic automatism.

9. The Classification which we suggest for general adoption is as follows :—

(a) The elimination of (1) organic brain conditions, (2) the sound but temporarily “knocked out,” and (3) the malingerers, in whom “the party’s criminal will” feigns symptoms that do not exist. Then we have still to discriminate

(b) The neurasthenic—where physical strain or infection lights up a psychopathic disposition.

(c) The psychasthenic—where psychical strain has upset an allied disposition.

(d) The neuromimetic (badly called the hysteric)—with dominant ideas, producible, and removable by suggestion.

(e) The traumatic—where there has been concussion, local or general, of all degrees of severity, with the usual symptoms.

(f) Shell shock—where high explosives have produced a syndrome of symptoms more by emotivity than by commotivity, the latter altering, lessening, and even arresting the characteristic symptoms.

These varieties may be found separate or combined. Differentiation requires experience and expert knowledge. But it is essential for early and satisfactory treatment. I append a specimen of a card recommended by me for use by the different medical officers concerned.

10. Finally, the definite prognosis and assessment values of this new syndrome seem still unsettled. Our Australian policy is to board all cases of definite shell shock as soon as possible for Australia, as permanently unfit for Active Service in the future, and to treat the other classes of cases as, at least, temporarily unfit for Active, though, in many cases, probably fit for Home Service, either here or in Australia, after a period and a treatment that are determined from the circumstances of the case.

J. W. SPRINGTHORPE, Lt.-Col.

March 28th, 1918.

Specimen of proposed card for use of Medical Officers.

(Front of card.)

By Order

NEURASTHENIC, HYSTERIC, AND SHELL SHOCK CARD.

This Card is to be signed by M.O.s in charge of any cases of Neurasthenia, Hysteria, or Shell Shock, in..... Hospitals or Command Depots, and forwarded with the History Sheet.

.....
M.O.s will be held responsible for its completeness and accuracy.

(Back of card.)

NEURASTHENIC, HYSTERIC, AND SHELL SHOCK CARD.*Strike out each item that is not applicable.*

Name of Patient.....Rank.....Unit.....Reg. No.....

*In the family there has been***Hysteria — Epilepsy — Insanity — Neurasthenia —
Nervous breakdown — Nervous instability***Prior to enlistment patient ...**was :* **Highly strung — Alcoholic***had :* **Nervous breakdown — Fits — Injury to skull
— Syphilis — Insanity — Sunstroke***The patient himself had not**become :* **Nervy under strain of service***On**He had :* **Neurasthenia — Hysteria — Shell shock
with Wound — Burial — Gas — Concussion***At***Dazed — Unconscious — Maniacal — Dumb — Deaf —
Stammering — Blind — Amnesic***As a result he became ...**Had :* **Tremors — Headaches (frontal : occipital)
Insomnia — Bad dreams — Vertigo — "Turns"***He still has***Head-ache — Confused — Dull — Tremors — Vertigo —
Bad dreams — Insomnia — Defective Memory —
Power of Concentration — Sight — Hearing —
Stammering — Sweats — Flushes — Palpita-
tions — Gastric — Respiratory — Locomotive
troubles — "Turns"***Is :* **Dumb — Neurasthenic — Hysterical***He has developed***Neurasthenia — Hysteria — Myoclonic spasms —
Delusions — Epilepsy — Petit Mal — Mental —
Wasting***Other special points noted are***Hyper-thyroidism — Hyper-Adrenalism — Defensive
Reflex acts (jumps, flinches, etc.)**

Signed as true and correct.

Signature.....

Place..... Date..... Rank.....

THE CARE OF THE TUBERCULOUS SOLDIER.

BY MAJOR P. HORTON-SMITH HARTLEY, C.V.O., M.D., F.R.C.P.;
Honorary Adviser on Tuberculosis to the Ministry of
Pensions; Senior Physician to the Brompton Hospital for
Consumption and Diseases of the Chest.

In the paper which I have been asked to read to-day I propose to bring before the Conference the steps which are being taken in Great Britain to treat and assist the soldier who has acquired tuberculosis in the service of his country or whose disease has been aggravated thereby. Our Allies may have adopted methods which differ in part at least from those in vogue in this country, and a consideration of such differences may be of material value in indicating the directions which our further efforts should take.

A year ago, in an article published in the journal "*Recalled to Life*,"* I sketched out the proposals and plans which the Ministry of Pensions then had in view. In the present paper, based on my former article, I propose to bring the position up to date, to state what is being done and to indicate what there remains to do.

The problem, as you are aware, is a vast one. Up to the end of last year about 20,000 men had been invalided from the British Army suffering from pulmonary tuberculosis, and each year the war continues large numbers will be added to the total. The national importance of the problem is also heightened by the fact that too often a case entails suffering not only upon the patient himself, but also upon those near and dear to him, thus augmenting suffering and greatly increasing the cost of treatment.

Need for Careful Examination of Recruits.

In considering the subject, we must first ask ourselves whether every care is exercised to limit the problem by seeing that men already suffering from tubercle are not admitted into the Army. In the past this has not been the case. Men have been passed into the Army who had previously been inmates of sanatoria, and had suffered from consumption. Of these, not all break down again, the result depending much on the hardships to which they may or may not be exposed, but many certainly do succumb after a longer or shorter interval, and are invalided from the Service, thus entailing great expense to the country in treatment allowances and pensions. It is clearly wiser, therefore, to exclude such men from the Army, leaving them to continue their work, which may be of great value to the country, in their more sheltered civilian capacity. Great care must be exercised, therefore, in examining recruits. Histories of previous pleurisy and hæmoptysis must be carefully enquired into and investigated,

* "*Tuberculosis in its relation to the War*," *Recalled to Life*, No. 2 (p. 254)

and the assistance of Tuberculosis Officers and others who have experience in the diagnosis of diseases of the chest invoked in any case where doubt or difficulty arises. The need of care in this respect is now more generally appreciated, but it must be constantly borne in mind in the interest both of the country and of the individual recruit.

But if all such cases of obvious tuberculosis could be eliminated from the Army we should still have a vast problem to deal with, for to the war itself must be attributed a large proportion of the cases of phthisis with which we have to deal. Modern research teaches us that nearly every adult is already infected with tubercle. Under normal circumstances the natural immunising processes are sufficient to prevent the spread of the infection, and most of us carry the poison through life without harmful result. But under the strain of active service it is different. The soldier's strength becomes sapped by exposure and strain and his vitality diminished, and under these conditions the tuberculous focus, which might otherwise have remained for ever dormant, wakes into life, and signs of active disease, for the most part affecting the lungs, make their appearance.

Direct infection has no doubt also played its part in the spread of tuberculosis, which we are considering. The close proximity of man to man, inseparable from life in tents and the unavoidable overcrowding sometimes met with in billets or huts, must have presented many opportunities for *massive* infection and consequent danger when a case of consumption has developed under such conditions.

Need for Early Diagnosis.

The next point which must be borne in mind is the necessity for early diagnosis, when once signs of pulmonary tuberculosis begin to manifest themselves, if we are to obtain the best results from treatment and prevent the further spread of the disease. In view of the insidious onset of the malady in so many cases this is by no means easy, especially under conditions of active service. The members of the Royal Army Medical Corps must, therefore, ever be on the watch for the disease, and when signs of lassitude, cough and wasting make their appearance the man should at once be placed under observation, his temperature registered, and the sputum tested, not once, but many times. If this is done, in most cases the disease will be recognised early, and appropriate treatment will have the best chance of success.

Let us now consider what is being done in this country to secure for the soldier who has developed phthisis the treatment best suited for him in the different stages of his illness, and in the following pages pulmonary tuberculosis or phthisis will be especially considered, this being the chief problem with which we have to deal. It should be added, however, that treatment for surgical and other forms of tuberculosis is provided by the National Health Insurance Commissioners.

Treatment of Early Cases of Pulmonary Tuberculosis. Sanatorium Treatment.

As soon as it is evident that the patient is suffering from phthisis, or even when this is strongly suspected, he is sent home to one of the military hospitals in this country. If there is no doubt about the diagnosis he comes before a Medical Board, and in due course is invalided from the Army, his further treatment being undertaken by the Civil Authorities. Before being discharged, however, from the military hospital, and in order to avoid delay in procuring him suitable treatment, steps are taken to arrange with the "National Health Insurance Commissioners" for his admission to a sanatorium, if he be an early case, or to a hospital if his disease be more advanced—every discharged soldier, whether insured or not, whose tuberculosis has, in the opinion of the Invaliding Board, been either "caused" or "aggravated" by military service, being now entitled, under arrangements recently made, to such form of treatment as his case requires. For this purpose a form (National Health Insurance, A.F.O. 1835), entitled "Application for Sanatorium Benefit on Discharge from the Army," is filled in, giving the man's name and intended place of residence on discharge, together with certain medical details in regard to his case. It is signed by the officer in charge of the military hospital, and forwarded to the National Health Insurance Commissioners of England, Scotland, Ireland or Wales (at the addresses given on the form), according to the part of the kingdom in which the applicant proposes to reside. Arrangements are then made by the Commissioners (under financial agreement between the Commissioners and the Treasury) whereby the soldier, now invalided from the Service, is transferred, provided he be an early case and accepts the treatment, to a sanatorium, and this is, so far as possible, the institution with which the Insurance Committee of his place of residence has habitually made arrangements, and consequently, as a rule, not far from the patient's home.

Before leaving the hospital the case is also brought to the notice of the *Local War Pensions Committee* of the area in which the man will eventually reside. These bodies have now been established all over Great Britain, and one of their most important duties is to keep in touch with discharged soldiers and to assist them when in difficulty, and to obtain for them such treatment as they may from time to time require,

In the early period of the war not a few men refused sanatorium treatment in their anxiety to return home and see their relations and friends, from whom they had been long separated. This difficulty has been overcome by granting the soldier a fortnight's leave on full pay and allowances after leaving the military hospital and before entering the sanatorium. In other cases, refusal of treatment may have been due, in part at least, to insufficient care on the part of hospital authorities in impressing upon the patient the necessity of accepting sanatorium treatment

in the early stages of his disease. To give another chance to such patients, the Ministry of Pensions has made financial arrangements with the Insurance Commissioners whereby, if such a case is brought to their notice by the Local War Pensions Committee or otherwise within six months of discharge from the Army, sanatorium treatment will be given with as little delay as possible.

Allowances during Sanatorium Treatment.

It was clearly useless, however, to expect men who may not feel very ill, and who are capable of some work, to accept sanatorium treatment should they feel that their families are in want as a result of their absence from home. It was decided, therefore, that whilst a man is at a sanatorium he shall be considered "totally disabled," and he is in consequence given an allowance at the maximum rate of pension which, in the case of privates, amounts to 27*s.* 6*d.* a week (less a deduction of 7*s.* per week in respect of maintenance), together with a separation allowance of 13*s.* 9*d.* per week for wife, and of 5*s.* per week for the first child, 4*s.* 2*d.* for the second, 3*s.* 4*d.* for the third, and 2*s.* 6*d.* for the fourth and subsequent children, provided they are under 16 years of age. It may be added that, as provided by Article 4 of the Royal Warrant, if a man refuses to carry out treatment without good and sufficient reason, he is liable to forfeiture of anything up to one half of his pension.

Treatment at the Sanatorium.

During a patient's stay at a sanatorium he is kept in bed for a time, and as soon as it is clear that there is no pyrexia (or as soon as this has passed away) he is, at all well-run sanatoria in Great Britain, treated by a system of graduated exercise, the German Liege-Halle system, of which rest is the chief factor, having never found much favour in this country, except, of course, in febrile cases. The exercise prescribed is at first walking only, but such a monotonous occupation is gradually replaced by light and useful work, increased little by little until at last, before their discharge, the most favourable cases do six hours' hard navy work a day.

As a result of this treatment the patient, when the course is finished, returns home with his muscles in good condition and able to resume work, but he must continue to carry out at home, as far as possible, the open-air lines of treatment which he has learnt at the sanatorium, if he is to maintain his health. He must also be careful not to overtax his strength in the early months after his discharge, and only gradually return to full work, and even then he should be in a position to take a day off from time to time and to rest if he should not be feeling quite himself. This has been the great difficulty with the sanatorium patient in the past, his "benefit" payment from his friendly society ceasing as soon as he returned to work of any kind, even for an hour or two a day, so that it has been incumbent on him to work at once "full time" if he is to earn his weekly wage and

thus to support himself and his family. The ex-soldier is, however, in a happier position. The Minister of Pensions, recognising the position, and appreciating the fact, accepted by all life assurance societies, that a man who has had consumption can never be regarded again as the equal of one who has not suffered from this malady, has taken steps in conjunction with the Ministry of National Service to see that all Medical Boards at which the soldier's pension will hereafter be reviewed, shall be furnished with the opinion and advice of the Medical Superintendent of the Sanatorium (if the patient be still at the sanatorium when the Board is held), and afterwards of the Tuberculosis Officer, who will have the future care of his case, and who will be conversant with his condition, so that the man's pension will be properly graded according to his working capacity, in so far as this is affected by his tuberculous disease. This is a matter of vast importance, and the Minister's wise and just decision will in future afford the patient a greatly increased chance of maintaining arrest of his disease.

Advice as to Work and Occupation after leaving the Sanatorium.

It may at this point be of value to refer to the important question as to the kind of work which the patient should undertake on leaving the sanatorium, and the advice which should be given him in this respect, for upon a right decision in this matter his future health will largely depend. He will be a man who has probably had some former trade or occupation, and if this be not obviously injurious, the question often to be settled is as to whether he should return to his former occupation, which will probably offer him a good wage, even though this may necessitate his living in a city under "urban conditions." Some recent observations on the after-histories of patients who have left the Brompton Hospital Sanatorium, at Frimley, in Surrey, are very instructive in this respect.* They would seem to show that the outlook for patients with limited disease who leave the sanatorium with their malady arrested, and who return to urban life under fairly satisfactory conditions, is infinitely less hopeful than the outlook for similar cases who have been able to effect a change of environment into the country and sometimes a change of work. If possible, therefore, a return to town life should not be sanctioned, but in advising on the matter we must ever bear in mind the wage to be earned from any form of work proposed, for it is of paramount importance, that the man should obtain from his work, supplemented by his pension, a sufficient income to enable him to be properly fed and adequately housed. Without this the most ideal climatic conditions will not save him from a breakdown and renewed activity of his disease. The work also must not be of too arduous a nature.

* See "The Value and Limitations of Sanatorium Treatment as regards the Working Classes," by W. O. Meek, M.B., B.S. Lond., M.R.C.S., L.R.C.P., Medical Superintendent, Brompton Hospital Sanatorium, Frimley, *The Lancet*, 1917, Vol. II. (p. 785).

For this reason, the advice so often given, urging the patient to give up his former occupation and to undertake, without any previous experience or training, the work of an agricultural labourer, is generally mistaken. The wages are not high, the housing accommodation is too often very poor, and the work is often exceedingly arduous. It is carried on under conditions of great exposure, and the hours at certain seasons are very long. As a result, only the exceptional case can stand it without breaking down, and it is not suitable for the average consumptive on leaving the sanatorium. We may add, too, that it is not a life which possesses great attractions for the former town-dweller.

In many cases, owing to the difficulty of finding a totally new occupation, and the fact that under such circumstances the man will at first be untrained, and therefore capable, for a time at least, of earning only a low wage, probably the wisest course is to allow the patient to return to his former avocation, provided it be not, like coal-mining, clearly and obviously unsuitable to a consumptive patient, *changing, however, the environment whenever possible*. "Thus," to quote from my former paper, "a clerk may return to his clerical work, but should obtain, if possible, a post in the country or at the seaside. Similarly, a bank clerk may often be transferred to a country or seaside branch. A railway porter should apply for removal to a country station, and a policeman to a suburban division, while a carpenter may obtain work as an 'estate carpenter.' In this way the patient is often enabled to return under good conditions to his former work, in which he is skilled, and can thus earn a better income than if he attempted a change of occupation. He has accordingly more money to spend in food, his vitality remains good, and his chances of keeping well are increased.

"Should it be necessary, however, to find a fresh occupation for a patient, then one must be chosen in which the work is carried on under satisfactory conditions, and as much in the open air as possible. Whenever possible, too, the employé should be to some extent his own master in regard to the number of hours worked each day, and the ability to take a day off from time to time, should he not be feeling quite up to the mark. In this way his strength is conserved, and the danger of a breakdown lessened.

"In deciding on the exact occupation, the various trades should be considered. For example, in the building trade the work of a painter or decorator, a builder, a bricklayer, a carpenter or joiner may all be permitted, by preference, however, in a smaller rather than a larger town. Similarly, wood-carving or wood-road laying may be suitable.

"In the transport trades a man might take up the work of a coachman, cab-driver, chauffeur, taxi-cab driver, motor-van driver or motor-cleaner, but experience shows that the work of an omnibus or tram conductor or driver is too arduous in these days of large vehicles and rapid driving. Railway ticket collecting and some forms of mechanical work on the railways should also be suitable.

“ Certain lighter forms of work on the land may also be recommended, such as market and flower gardening, fruit growing, hurdle-making, forestry and woodman's work. The work of a game-keeper, park ranger, park attendant or lodge-keeper is also excellent, but the number of such posts is limited.

“ Other light occupations which may be mentioned are those of a traveller, an insurance or commission agent, rent collector, canvasser (though in individual cases they may involve too many hours' walking), commissionaire and bookstall attendant.

“ Should in any case the larynx be affected, an occupation involving much talking is to be avoided. Similarly, if the case be one liable to superadded attacks of bronchitis, then the less exposed occupations must be chosen. Window cleaning is not to be recommended, owing to possible risk of hæmorrhage.

“ The above list of occupations is by no means exhaustive, and is given only as an indication of the kind of occupation which may be recommended.

“ If the ex-soldier's occupation is thus changed, it is probable that for a time at least there may be some loss of income, but, as already pointed out, this will be taken into account when his pension is reviewed from time to time, in so far as the Medical Board is satisfied that the man's physical condition is affecting his normal working capacity.”

The Value of Health Visitors.

A change of environment, and sometimes of work as well, such as we have recommended, is not, however, to be accomplished by the stroke of a pen, and certainly not without taking all the circumstances of the man's family and home-surroundings into consideration. For this purpose the services of a health visitor who has had training in social work, as well as practical experience at a tuberculosis dispensary, have been found of great value. It is her duty, while the patient is at the sanatorium, to visit his home and to make herself acquainted with the circumstances of his family. Should the Medical Superintendent of the Sanatorium, after becoming fully conversant with the man's case, advise a change of work and environment, it is her privilege, in co-operation with the Local War Pensions Committee and the Tuberculosis After-Care Committee, where such exists, to help him to effect the change, and very often her efforts will be successful. Later it will be the duty of the health visitor to visit the home from time to time, so see that proper precautions are carried out and that the man reports himself to the Tuberculosis Officer for examination at regular intervals. She will also arrange for the examination of contacts, and give friendly counsel in regard to the occupation chosen for the children, bearing in mind their predisposition to the disease.

Health visitors such as these already exist in certain areas and are doing excellent work, and a proposal is now being considered by the Ministry of Pensions and the Local Government Board to

establish them generally throughout the country, so that the tuberculous soldier may obtain the maximum benefit from the treatment which he is entitled to receive.

Treatment of Advanced Cases.

After the patient has returned to work he is kept under observation by the Tuberculosis Officer, the health visitor seeing that he reports from time to time for medical examination. Should he show signs of breaking down, it is the duty of the Tuberculosis Officer to obtain for him, through the Insurance Committee, the treatment which his case requires, possibly a further course of sanatorium treatment, possibly treatment at home under his panel doctor, or possibly a spell of hospital treatment.

A time will come, however, in most cases, when the disease becomes advanced, and the patient bed-ridden and totally incapacitated. He is now in urgent need of medical treatment and careful nursing, and it is a time when, in the interests of his wife and family, in order to avoid the risk of *massive* infection, which at this stage of the disease is a grave one, he should receive institutional treatment. Such cases in the past have too often drifted into the Poor Law infirmaries—when they have not declined such treatment and elected to remain at home, with all the attendant risks and consequences to their families—since provision for such cases is not generally made under the Insurance Act.

To prevent this unsatisfactory state of affairs, provision of "advanced beds" has been made by the Minister of Pensions. Arrangements in the first place have been entered into with the Metropolitan Asylums Board, whereby up to 150 beds have been made available in the hospitals under their charge in the various London districts, for the treatment of such cases, which must be certified—as "in need of residential treatment, though not likely to recover a reasonable degree of working capacity." At present three wards, containing 64 beds, have been opened, and as the necessity arises more will be placed at the disposal of the Ministry. The Metropolitan Asylums Board is responsible for the maintenance and treatment of the patients, the actual cost being paid by the Ministry. The arrangement has worked excellently, and the Ministry is indebted to the Metropolitan Asylums Board for the valuable help which it has given in this matter. The patients have been admitted without delay, have been well and sympathetically treated, and not a few have stayed until they died in the institution. As the patients for whom these beds are assigned are drawn from London and the adjoining counties, they are not too far removed from friends, who can visit them from time to time, and a sense of isolation is thus avoided.

In other parts of England beds for advanced cases are also being provided. At the Walker Gate Sanatorium, Newcastle, and at the Cottingham Sanatorium, near Hull, 15 beds at each institution have been placed at the disposal of the Ministry, and

at Bierley Hall, Bradford, and at the Fazakerley Sanatorium, near Liverpool, 60 and 30 beds respectively will shortly be available. At the Cambridgeshire Tuberculosis Colony, at Papworth Hall, some ten miles from Cambridge, the Pensions Ministry has also obtained a lien on 40 beds, some of which will be used for advanced cases. In addition, small pavilions to accommodate 12 beds each (in the case of Birmingham, 24) are being erected in the grounds of existing hospitals and sanatoria, namely, at St. Helens, in Lancashire, at Birmingham, Derby, Southampton, Bristol and Exeter, and these will shortly be in occupation. Towards the cost of the erection of these buildings the sum of £10,000 has been generously placed at the disposal of the Ministry by the British Red Cross Society and the Order of St. John of Jerusalem. The pavilions so erected, as well as the beds at the various institutions referred to above, will serve not only the urban districts mentioned, but also the surrounding areas, and the patients admitted will not be separated too far from relatives and friends.

It is interesting to note that in France our Allies recognise equally with ourselves the importance of providing hospital treatment for the advanced tuberculous soldier, alike in the interest of the patient himself and with a view to preventing the spread of infection to his family, in this last and most dangerous stage of the disease, and that the erection of a hospital for this class of case is in contemplation by the French Red Cross Society.

Farm and Training Colonies.

In conclusion, I must say a few words in regard to farm and training colonies. In discussing the question of the work which a patient should take up after leaving the sanatorium, I have indicated that there are certain occupations, such as coal-mining, which, though not unhealthy in themselves, are clearly unsuitable for the consumptive. If the patient's previous occupation has been of such a nature, he must, therefore, perforce effect a change. A certain number of such patients may have had some previous knowledge of the land and be desirous of undertaking training in agricultural work, and for such as these farm colonies are being started. To these institutions the selected patients will be drafted direct from the sanatorium, and at them they will stay a year, since adequate training cannot be given in a shorter time. During this period treatment will be continued, and the patient will also be trained in agricultural work, market-gardening, pig-keeping, bee-keeping, poultry-farming and dairy-work, together with rough carpentry and metal work, so that at the end of his stay he will be in a position to undertake work on the land either in this country or the colonies, or if he should eventually find other work, he would possess the requisite knowledge to cultivate an allotment with profit and success. During his year's stay the arrest of his lung disease should be rendered more secure.

Such colonies are a new development and are still in the experimental stage, for it is not known whether, under the existing

conditions of the labour market, when well-paid work is so easy to obtain, men will be content to remain a year at a colony, nor can it be said as yet with certainty how far the after-history of a colonist, trained and treated as above, is better than that of a man who has simply passed through the full course of graduated labour at a first-class sanatorium, and returned to suitable work in good environment at the end of his three or four months' treatment. This being so, and as the cost to the country of treating and training a patient at such a colony for a year will be considerable, the Ministry of Pensions is proceeding carefully in the matter, but if such colonies prove successful the scheme will no doubt be extended.

At present four such colonies are being started. They are as follows :—

1. The Red Triangle Colony, at Kinson, five miles from Bournemouth, under the management of the Young Men's Christian Association. (21 colonists.)
2. The Cambridgeshire Tuberculosis Colony, at Papworth Hall, ten miles from Cambridge, at which the Ministry has a lien on 40 beds, some of which will be available for colony patients.
3. The colony now being inaugurated through the generosity of Mr. R. A. Pilkington in connection with the Liverpool Sanatorium, in Delamere Forest. (30 colonists.)
4. The Royal Victoria Farm Colony, Polton, near Edinburgh, originally started by Sir Robert Philip. (Possibly 100 beds.)

Each of these colonies will probably develop on slightly different lines, as dictated by local conditions. At Kinson and at Edinburgh the colonies, as at present advised, will be purely agricultural. At Delamere Forest it is hoped that, through the good offices of H.M. Office of Woods and Forests, training in forestry will also be given, for which there will be full scope after the war, and it is possible too that training in a trade, such as clog-making, may be provided for certain of the colonists. At Papworth, under the energetic management of Dr. Varrier Jones, there will be training in agricultural and gardening work, but carpentering and engineering shops are also being erected. In the latter a course of instruction will be given, having as its basis the agricultural motor trade, such motors being now much in request in the agricultural counties adjoining Papworth, and the work of driving such ploughs having been found suitable for the patients. The colony at Papworth bids fair, therefore, to develop into a *training colony* rather than a farm colony pure and simple.

Such variation is all to the good, and will help to show on what lines the movement may best attain permanent success.

The patients sent to the colonies by the Ministry will be carefully selected, and will be those with early disease, in whose

sputum tubercle bacilli have been found; or who have had a definite attack of hæmoptysis or pleurisy with effusion, thus leaving no doubt as to the correctness of the diagnosis. The patients will be received direct from the sanatorium, and must be capable of working at least six hours a day without pyrexia, malaise or undue acceleration of pulse. They will engage to stay a year at the colony. During their stay payments for maintenance and training will be made by the Ministry on behalf of patients whose cases have been accepted by the Ministry at rates agreed upon between the body responsible for the management of the colony and the Ministry. The individual patient will also be entitled to the following benefits. During the year of treatment and training the man's pension will be in abeyance, but he will receive instead an allowance at the rate of 27*s.* 6*d.* per week, from which a certain amount will be deducted weekly towards the payment of his board and lodging. Out of the balance it is proposed to pay over to him 5*s.* weekly, leaving the remainder to accumulate for his benefit until he leaves the colony, or, should he desire it, the balance may be paid weekly to such dependents as he may name. In addition to the above allowance, the colonist will be entitled during the last six months of his course to a weekly bonus of 5*s.* per week, provided that he completes satisfactorily the full year's course of treatment and training. This bonus will be paid to him at the termination of his year's course.

At the Kinson Farm Colony it has been decided (and possibly similar arrangements may follow elsewhere) that at the end of the twelve months' course the colonist will also receive a small sum, representing half the net profits (as apportioned among the colonists) which it is hoped may accrue from the successful farming operations of the colonists, the exact amount depending largely upon their individual efforts. The remaining 50 per cent. will go towards defraying the cost of the maintenance of the colonists.

Such are the lines on which farm or training colonies are being developed in this country, and it is hoped that these institutions may be the means of giving a fresh start in life to many a deserving patient, who might otherwise drift downhill by returning to unsuitable work amid unsatisfactory surroundings. In association with the other measures already taken for the proper care and treatment of soldiers whose tuberculosis has been caused or aggravated by military service, they are also an earnest of the firm resolve of the Minister of Pensions to spare no pains and to save no effort in his determination to do all possible to help these most deserving men, who have jeopardised their health in the service of their country.

LIFE AT ST. DUNSTAN'S.

The Training and Re-education of the Blinded Soldiers.

BY SIR ARTHUR PEARSON.

Soldiers and sailors who have lost their sight at the war are taught to be blind, re-educated, and trained at St. Dunstan's, Regent's Park, London.

The methods of treatment there differ entirely from those necessary in the cases of men suffering from any other form of disablement, for the men who have been rendered sightless have literally to learn to live their lives anew.

In the early stages of his disability a newly-blinded man requires help and assistance in the simplest matters of everyday life, and great care is taken at St. Dunstan's to initiate him into the best methods of re-adapting himself to his new and puzzling conditions. It is in reference to matters of this kind that the expression "taught to be blind" is used.

The actual re-education and training is divided into two sections, that of the class-room and that of the workshop. The men's working days are divided between these two. Those who are in the workshop in the morning are in the class-room in the afternoon, and *vice versa*. The hours of work are short—from 9.30 to 12 in the morning, and from 2.30 to 4.30 in the afternoon, with an optional extra hour morning and afternoon for those who desire it. Working under the handicap of newly-inflicted blindness imposes a very much greater mental strain than those who can see would imagine, and there is no doubt that one of the main reasons for the remarkable speed with which the men of St. Dunstan's acquire their knowledge and learn their handicrafts is the shortness of their working day.

In the schoolrooms men are taught to read Braille. The facility with which they acquire this depends not only upon their intelligence, but upon the sensitiveness of their touch. It is quite a fallacy to suppose that a newly-blinded man immediately acquires an exquisitely delicate sense of touch. Some men prove to possess so poor a sense of touch, and some have been so badly educated in the past that they are quite unable to master the difficult art of tactile-reading. But these cases do not amount to more than ten per cent. of the total. The men of St. Dunstan's also learn to write in Braille, with the aid of an ingenious little machine.

The acquisition of Braille imposes a great mental strain on most men, so their lessons are broken by work in the adjoining netting-room. Netting is the simplest handicraft which a blind man can learn, and while not ranking as an industry, may be

called a paying hobby, at which it is easy to make a few shillings a week in spare time. The most careful search has been made to discover the largest possible variety of saleable articles made by netting, and the range of work is much more considerable than would be supposed.

Typewriting is also taught in the class-rooms. It is found that almost every man is able to acquire the art of typewriting. The rapidity with which they learn, and the accuracy with which they write is very noticeable. Generally speaking, typewriting is not taught as an occupation, but in order to enable a man to continue to communicate with others by writing, for the handwriting of a blind man inevitably and sometimes very rapidly deteriorates, and the faults which are most apt to develop in it are those which the typewriter automatically corrects. The typewriters used are ordinary Remington machines, with the addition of a Braille scale. Special machines with ingenious appliances for the use of men who have only one hand have been built by the Remington Company, in consultation with the experts of St. Dunstan's. It has been generally forgotten that the typewriter was originally invented to enable persons who have been blind from infancy to write, an art which would otherwise be impossible for them to acquire. Every man is given his own typewriter when he has passed the writing test imposed, and arrangements have been generously made by the National Library for the Blind for the free lending for life of any quantity of Braille literature.

In the workshops, the largest number of men will be found to be learning cobbling, an occupation for the blind which was very little practised until it was developed at St. Dunstan's. A blind man, in the course of six or seven months, can learn to sole and heel a pair of boots as well as this can be done, and those who have passed through St. Dunstan's, having acquired this industry, are making good earnings. The cobblers are also taught mat-making, for the one disadvantage of cobbling is that work may sometimes be slack, in which case resort can be had to the mat-frame, thus securing constant employment, and providing another occupation at which good earnings are to be made.

Some men learn mat-making only. It is the easiest of the regular occupations for the blind. The profits are quite satisfactory, the one objection being the monotony of the work. Pupils are also taught to repair worn door-mats, and to make the plaited openwork mats which are often used in exposed situations.

Basket-making, the oldest of the staple industries for the blind, is taught in many varieties. St. Dunstan's does not profess to turn out a man who is a complete master of the art and can make every kind of basket. Men are taught to make baskets of a few saleable descriptions, and care is taken to ascertain whether any particular kind of basket is in special demand in the locality in which they are to settle.

The other industry taught in the workshops is joinery. Here again a man, unless indeed he has been a joiner before his disable-

ment, is not taught to be a complete all-round joiner, but learns to make a few saleable articles, such as picture frames, tea trays, corner cupboards, ornamental tables, &c. Practice enables these to be turned out as well and as quickly as they can be made by a sighted workman, and here again earnings of men who have left are on a very satisfactory level.

The men of St. Dunstan's acquire these industries in a quarter the time that is usually supposed to be necessary to teach a blinded man a trade. The principal reason for this is to be found in the free employment of the blind teacher, who is not encouraged at ordinary workshops for the blind. The whole outlook of a man becomes different when he finds himself in the hands of a teacher who works under the same handicap as his own. The more intelligent and apt men are kept as pupil teachers, and are paid salaries. It may be readily imagined how stimulating must be the effect on a newly-blinded man to find his first fumbling efforts directed by one who himself was blinded on the battlefield but a few months ago.

The short hours of work already referred to are another cause for the rapidity with which industries are acquired; another lies in the splendid spirit of cheery determination which pervade St. Dunstan's, and in the fact that these men are, with the exception of the loss of their sight, hale, healthy, normal individuals, differing as a whole widely from the workmen to be found in ordinary institutions for the blind.

Beyond the workshops is situated the poultry farm. Here an almost untried industry for blind people has been proved to be wonderfully successful. Men are taught poultry-keeping on practical and up-to-date lines. They learn to distinguish birds of different breeds almost instantaneously by touch, to manage incubators and foster-mothers, to prepare and truss birds for table, and generally to conduct a poultry farm on methods which, if intelligently followed, should ensure paying results. The poultry farm pupils are taught rough carpentry, and learn to make hen-coops, sitting-boxes, gates, &c. The finishing touches are given to the training of blind poultry farmers by a month at the St. Dunstan's Poultry Farm, near King's Langley. Here is raised the stock of birds of the best breeds which are given to men when they are set up for themselves, and the work of the poultry farm is carried on by relays of pupils from St. Dunstan's training grounds. A month spent in this practical work ensures the fact that a man, when he starts for himself, is thoroughly capable of conducting the business in which he has been trained. They are further assisted by an arrangement which enables their wives, mothers, sisters, or other relatives to acquire poultry farming at a large farm in the country, on the same principles as those taught at St. Dunstan's. This training is given to relatives free of all charge.

Let us now pass to the three occupations which are taught to the men who possess the highest degree of intelligence, and who have been best educated in the past. First of these comes

massage, the one occupation which a thoroughly well-trained blind man is able to follow, not merely as well as, but even better than, a man with sight. The massage training is conducted on the most modern and scientific principles. Men acquire a preliminary knowledge of anatomy, physiology and pathology at St. Dunstan's itself, and then pass to the massage school of the National Institute for the Blind, a thoroughly up-to-date and well-equipped establishment. Several leading London hospitals permit the more advanced classes to visit daily and massage patients. Testimony has been received from these hospitals as to the value of the assistance thus afforded. The men have to pass the examinations of the Incorporated Society of Trained masseurs, the most severe in England. So far none have failed, and at the last examinations held a St. Dunstan's graduate passed second of the 320 entrants from all over the United Kingdom, of whom all were sighted except his ten fellow graduates from St. Dunstan's. A large number of men have become duly qualified masseurs, and have joined the Almeric Paget Massage Corps. The whole of these have situations at military hospitals, where they receive a minimum wage of £2 10s. a week. As an example of their proficiency, it may be said that medical officers at hospitals and Command Depôts have stated that the blind men from St. Dunstan's were the most competent members of their massage staffs.

Another of the more intellectual occupations taught at St. Dunstan's is shorthand writing, combined, of course, with typewriting in its highest form of development. This seemingly impossible work for the blind is accomplished by means of a clever and quite small machine which enables Braille in its most condensed form to be taken down at a speed equal to that of the ordinary shorthand writer. Men who learn this art continue their training at St. Dunstan's until they have a speed of well over one hundred words a minute. Those who have been placed in situations are giving entire satisfaction. Here again the rapidity with which the art is acquired is most noteworthy.

Telephone operating is the third of the more intellectual occupations taught to the blinded soldiers. The blind telephone operator cannot, of course, work in public exchanges where the flash light system is in vogue, but is able to do so in exchanges belonging to large offices and business establishments where the drop-shutter system is installed. Though the shutters are made to pattern and are apparently identical, the blind operator in a few weeks can tell by sound which has fallen, and proves himself to be just as competent as a sighted employee. A good knowledge of Braille writing, as well as of typewriting, is a necessary part of the equipment of the blind telephone operator, in order that messages may be taken down and transmitted to various parts of the establishment in which he works.

In every possible case a man is returned to his original industry or occupation. There have been some very marked instances of success in this direction, and by the adoption of special methods

and the teaching of specially devised courses of instruction men have proved themselves capable of continuing their former work in cases where this seemed quite impossible.

The men of St. Dunstan's are taught to play as well as to work. Besides being taken out regularly for walks, they row, they swim, they compete in walking and running races, they learn to dance, and they are taught many indoor games, such as dominoes, draughts, chess and cards.

Rowing is a great feature of summer life at St. Dunstan's. An arm of the Regent's Park lake runs into the grounds, and at stated hours in the early morning, in the afternoon and the evening the lake is entirely occupied by blind oarsmen, accompanied by sighted coxes. The more proficient men are trained by some of the leading experts of the day, and each year compete in four-oared, pair-oared and single-scut races on the Thames.

Dancing is an extremely popular amusement. One evening a week is devoted to instruction by competent teachers of those who wish to become really proficient dancers, and on another evening dances are held at the different establishments to which men are permitted to invite their lady friends. Between the cessation of work and dinner-time one morning in the week a military band plays dance music indoors in the winter and on the lawn in the summer. Besides providing admirable exercise, dancing gives the men confidence in moving about and knowledge of the presence of obstacles. Few who see a dance at St. Dunstan's believe that the male partners are unable to see.

The men have a debating society, the sessions of which are well attended.

Almost every man learns some kind of musical instrument, from the humble tin whistle to the piano or violin. Those with any aptitude for singing receive lessons in the art.

The spiritual needs of the men of St. Dunstan's are cared for by an Anglican and a Roman Catholic chaplain. Separate chapels for services in each faith are in the grounds.

St. Dunstan's and its annexes now (March, 1918) contain about five hundred and sixty men. The London annexes comprise four large buildings, close round the original house, so generously lent by the American financier, Mr. Otto Kahn, and include Regent's Park College, which has been most kindly placed at the disposal of blinded soldiers.

There is a large convalescent annexe at Blackheath, and two others at Brighton. To one or other of these men are sent when they first leave hospital, and for periods of rest and recuperation should they be in need of these. At Ilkley, in Yorkshire, there is an establishment for the permanent care of men who, besides having lost their sight, have received injuries which make it impossible for them to carry on in the work-a-day world. Affiliated to St. Dunstan's is Newington House, Edinburgh, an admirable training establishment, to which blinded Scottish soldiers are given the option of going.

Four hundred and thirty men have passed through St. Dunstan's. Of this number ninety per cent. have been fully trained and have been set up in the occupations which they have learnt. The remainder, for some reason in connection with health or habits, have left partially trained, untrained or untrainable.

The present quarters provide accommodation for nearly one hundred men in addition to those in residence, and a new establishment, capable of accommodating eighty more, will shortly be ready.

When the training of a man has been completed at St. Dunstan's he is settled in the industry which he has been taught, is provided with an outfit and with a good stock of raw material. He is visited regularly, his work is supervised, raw material of the best quality is supplied to him at cost price, and assistance is given in the matter of marketing his goods either locally or at a central dépôt. This After-Care system is no mere temporary measure, but has been carefully organised upon a permanent basis, and it is anticipated that there will be an adequate sum for its steady maintenance.

The earnings of men who have left vary, of course, greatly, according to industry and aptitude. They average well over £1 a week, and many men are earning between £2 and £3 a week, while quite a considerable number earn even more than this. Earning capacity is, of course, likely to increase, as practice brings increased speed and aptitude.

A very real satisfaction lies not only in the fact that a man is able to augment his pension in so substantial a manner, but that he once more finds himself a capable citizen, competent, self-reliant, and able to regard blindness as it should be regarded—that is to say, not as an affliction, but as a handicap, which—like a keen golfer—he can steadily reduce.

Close to St. Dunstan's are houses at which the relatives of the inmates are entertained free of charge for a week or so at a time. Their journeys to and from London are paid, and the blinded soldiers are thus enabled periodically to enjoy the companionship of those who are near and dear to them.

Officers who have lost their sight do not live at St. Dunstan's. Those who are single reside in Portland Place, while those who are married are provided with flats or apartments in the neighbourhood. Week-end quarters are provided for them at Brighton in the winter, and on one of the upper reaches of the River Thames in the summer. All go to St. Dunstan's daily to learn Braille and typewriting and some occupation to be pursued for pleasure or profit. Most of them also follow some special course of study.

LA SYSTEMATION DES AVEUGLES DE GUERRE EN RAPPORT AUX CRITERIUMS SUIVIS POUR LEUR REEDUCATION.

PAR DOTT. LAVINIA MONDOLFO, Directrice de l'École de Rééducation des Soldats aveugles de Milan.

Criteriums par Lesquels fut Inspiree la Reeduction des Soldats Aveugles.

Le nombre des soldats aveugles en Italie n'est pas heureusement si considérable que dans les autres pays belligérants et le problème de leur rééducation a pu être étudié et résolu moyennant l'institution de six maisons de rééducation et d'assistance approuvées par le Gouvernement, fondées à Florence, Rome, Naples, Milan, Padoue, Catania.

Les buts en vue desquels fut généralement inspirée l'œuvre pour l'assistance de ces invalides, que tout le monde considère avec raison, comme les plus méritoires de notre sollicitude sont parfaitement identiques à ceux qu'on a adoptés dans le même dessein dans tous les autres pays où la guerre a laissé ses traces tragiques ; des buts d'un ordre individuel et social, des buts d'une utilité matérielle et morale qui se résument dans la défense qu'on voulut offrir à l'individu contre son angoisse mêmes, contre son désespoir, dans la persuasion de sa réaptitude comme force productive, dans la vie sociale et dans la défense qu'on a voulu offrir à la société du lendemain contre la plaie d'un parasitisme démoralisant produit par l'état de végétation dans l'inertie passive de tant d'individus diminués qu'elle n'aurait pas su remettre en valeur, comme forces actives parmi toutes celles qui sont dirigées au développement progressif de la civilisation.

Ecoles de Reeduction Existantes en Italie.

Les six écoles de rééducation pour militaires aveugles, pour lesquelles fut rédigé un programme d'action sur la base des critères susmentionnés, développaient déjà leur activité, les unes avec le concours du Gouvernement, d'autres avec le seul rendement de la bienfaisances des citoyens, lorsque la loi du mois de mars 1917 sur les invalides de guerre en régla les efforts et en détermina les fonctions. Par l'effet de la susdite loi, les militaires blessés aux yeux doivent être promptement transférés de la zone de guerre dans les trois hôpitaux de concentration de Milan, Florence et Rome ; quand ils n'ont plus besoin de soins, et s'ils sont déclarés complètement aveugles ou n'ayant pas une perception suffisante de la vue, ils sont transférés, pour leur assistances et rééducation, dans les instituts qui ont été reconnus par l'administration militaire, moyennant convention approuvée par le Ministère de la guerre. Ces instituts, quoique étant con-

sidérés comme des instituts civils, restent sous la surveillance hygiénique, sanitaire et disciplinaire du Directeur de la Santé agréé au corps d'armée respectif et dépendent de l'Œuvre Nationale, Institution que la même loi a créée pour pourvoir à la protection de tous les invalides de guerre.

La tâche des écoles de rééducation a été facilitée, après la promulgation de la loi, par une disposition d'après laquelle le militaire aveugle doit subir dans les hôpitaux de concentration, pendant les longs mois de convalescence, une première préparation psychique à sa nouvelle vie laborieuse dans les ténèbres et une éducation méthodique sensorielle, qui, si elle est dirigée scientifiquement, soustrait bientôt l'aveugle au noir désespoir auquel il s'abandonne depuis le jour où il a perdu l'espérance de la lumière, réveille son intérêt et excite son esprit d'observation pour ce qui l'entoure et qui peu à peu devient son monde. L'éducation sensorielle et la préparation physiologique et psychique du soldat devenu aveugle ont trouvé dans le Prof. Bardelli de Florence un véritable apôtre scientifique. Dans la section "Villa Trollope" de l'hôpital militaire de Florence, dirigée par lui-même, il ne néglige rien pour développer, même moyennant des jeux, qu'il a inventés avec génialité, le sens de la forme, du poids ou de l'espace dans les militaires aveugles qui sont confiés à ses soins, et pour leur rendre, par l'emploi précis d'une consciencieuse éducation des sens demeurés sains, un patrimoine de sensations élémentaires, qui, devenant peu à peu inconscientes, remplacent celles qui avaient leur centre dans la vue.

De même, le Prof. Cirincione à Rome, le Prof. Denti à Milan dirigent l'école de pré-rééducation dans les hôpitaux de concentration confiés à leurs soins.

La première maison fondée en Italie fut celle de Florence. Elle fut ouverte déjà en novembre 1915 pour recevoir les premiers aveugles de guerre dans une gracieuse villa de Via della Robbia, qui devint plus tard une maison de rééducation pour les seuls officiers, c'est-à-dire la maison de rééducation pour les soldats aveugles fut transférée. Le choix de la nouvelle maison fut très heureux : position riante, jardins d'une étendue sans limites, terrains cultivés aux environs et doucement descendant vers la vallée fertile, appartements spacieux, bien aéré, loin du bruit de la ville, endroit tranquille, inondé de soleil et d'air pur, le plus propre peut-être de tous ceux qui sont en Italie destinés à recevoir les militaires aveugles, le plus convenable à les réconcilier avec la vie, conquis qu'ils seront par l'enchantement suggestif de cette grande mère consolatrice, la Nature, qui garde même pour ceux qui ne peuvent en jouir par les yeux, quelques-unes parmi ses expressions de beauté les plus exquises. Dans la dite maison déjà 146 militaires aveugles ont trouvé hospitalité, dont 57 furent congédiés par suite de rééducation acquise, 20 pour motif de famille ne purent pas compléter leur rééducation, 6 furent transférés en d'autres instituts, 4 furent éloignés pour motifs disciplinaires, 1 pas susceptible à la rééducation fut de même

licencié; et au 31 mars dernier étaient présents à l'école 50 soldats.

L'école de Rome fut la seconde; en effet, elle fut ouverte dans les derniers mois de l'an 1915 et eut son siège dans la splendide villa Aldobrandini, d'où ensuite elle fut transférée à Frascati dans une charmante position. Récemment, elle fut de nouveau transférée à Rome près l'avenue des Parioli; mais les soldats aveugles regrettent les belles avenues silencieuses de Frascati, où ils pouvaient se promener seuls, au grand air, et retrouvaient la douce sérénité de l'âme, respirant, entre une occupation et l'autre, la paix tranquille des champs. Ensuite, c'était le tour de Milan. A Milan l'école de rééducation pour les militaires aveugles fut inaugurée le 6 janvier 1916 et eut son siège dans une aile du grandiose Institut des Aveugles, rue Vivaio 7, où des laboratoires spacieux se prêtent au développement d'une école professionnelle et où l'air et la lumière pénètrent par ondes à travers des hautes fenêtres rendant l'endroit moins austère et sévère. Un vaste jardin entoure, presque de tous les côtés, l'édifice, dont une petite portion est assignée aux soldats aveugles pour s'y promener librement.

C'est d'un espace beaucoup plus restreint que les militaires aveugles peuvent jouir, durant leur rééducation, à l'école de Naples: elle a profité des mêmes appartements, dans lesquels, depuis des années, le " Patronat National Margherita " développe une action éducative sur les aveugles nés, et c'est précisément avec les aveugles bourgeois que les militaires aveugles étudient et travaillent dans une fraternité sympathique, d'où sont dérivés de nombreux avantages et des inconvénients fort limités.

La maison de Catania fonctionne depuis le mois de mars 1917 et dispose de 30 postes. Au 15 février dernier, elle logeait 7 invalides.

La maison de Padoue a eu une discrète activité, mais la situation de la ville, devenue à un certain moment dangereuse, a empêché cette école de rééducation de se développer et de donner tous les bons résultats qu'on pouvait attendre de sa bonne préparation.

Des données statistiques annexées on peut conclure sur l'activité des diverses écoles de rééducation, depuis le commencement jusqu'aujourd'hui, et on relève que les maisons de Florence, de Milan et de Rome ont été et sont encore les plus actives qu'elles ont eu une organisation apte à donner à leur œuvre un ample développement.

Catégorie de travaux auxquels peuvent se dédier les aveugles de guerre; leur nature par rapport aux critères informateurs de la rééducation.

Le soldat qui, dans la fleur de son âge, dans la pleine vigueur de ses forces, tombe, foudroyé, de la lumière dans les ténèbres ne devrait pas, à proprement parler, être retenu aveugle, dans le sens qu'on attribue ordinairement à ce mot; ainsi que l'on a très

bien remarqué, le Professeur Auguste Romagnoli, connaisseur sagace et profond de la vie des aveugles, l'aveugle de guerre est un homme normal, forcé à vivre dans l'obscurité.

Qui réfléchit sur la profonde signification de cette assertion ne peut à moins d'en tirer la conséquence naturelle, que l'œuvre éducatrice ne devra nécessairement pas suivre la fausse route de l'œuvre éducatrice traditionnelle en usage pour les aveugles nés.

L'homme devenu aveugle voit encore dans la mémoire ; celle-ci est en lui réveillée, ravivée par le moindre souvenir qui rappelle la sensation d'une forme ou d'un poids ou d'une distance, d'une surface ou d'un objet quelconque, et l'association des idées acquises par lui précédemment, devient même d'autant plus fervente et vive que manque la multitude des images infinies qui entrent par l'œil simultanément dans l'âme de l'homme qui regarde autour de lui.

Tenant compte de cette potentialité de l'aveugle de guerre, la catégorie de travaux, à laquelle il pourra être dédié avec succès, sera beaucoup plus vaste que celle à laquelle se sont dédiés jusqu'à présent les aveugles-nés ; mais tenant compte de sa dépression morale et de l'état de découragement qui affaiblit sa volonté et provoque la défiance à laquelle il s'abandonne, il ne serait pas opportun de l'inciter, dès le début, à choisir un des métiers qui présentent quelque difficulté.

C'est pourquoi nos écoles de rééducation offrent toutes à leurs hôtes, au moins pour les premiers temps de leur séjour, un choix de travaux d'un apprentissage assez facile, pour lesquels tous, depuis les plus intelligents jusqu'aux plus tardifs, ont la presque immédiate consolation d'une première victoire sur le noir découragement qui les dominait. Parmi les métiers les plus faciles, on peut citer les suivants : Empaillement de chaises, fabrication de brosses, de balais, de filets à différents usages, entrelacement de paille pour nattes, etc. Tous ces métiers offrent une distraction utile à l'aveugle et en même temps l'espoir d'un petit gain facile à obtenir, soit des paysans, soit des citadins qui s'en occuperont. En examinant les données ci-jointes sur l'activité des différentes écoles de rééducation, on s'aperçoit de suite que le plus grand nombre des aveugles cités dans ces tableaux a appris un ou deux métiers. Les moins intelligents et les paresseux s'arrêtent à ce premier degré d'exercice ; mais les plus actifs et intelligents, après quelques jours de ces travaux ordinaires et élémentaires, s'en ennuiant et tâchent de s'occuper à des métiers plus difficiles à apprendre et passent aux travaux de sellerie et de cordonnerie, à la reliure des livres, à la vannerie, au travail en bois, et ils passeraient aux travaux des métaux et du cristal, s'ils trouvaient, comme en France, des laboratoires préparés pour ces derniers genres de travaux.

Le choix du métier, bien qu'en partie il soit accompli sous l'efficace suggestion des directeurs des écoles de rééducation, est laissé libre, après une période d'essai des aptitudes individuelles,

aux militaires, qui (comme on l'a observé) ne se dédient pas toujours volontiers à leur ancien métier, exercé avant la guerre ; s'ils s'engagent, par des raisons évidentes de routine acquise, à en reprendre l'exercice, ils doivent passer, dans les premiers temps, des heures d'accablement et de désolation que n'éprouvent pas ceux qui se dédient à l'apprentissage de métiers qu'ils n'ont jamais exercés. L'effort d'accomplir dans l'obscurité les mêmes opérations qui, avec l'aide de l'œil, étaient devenus, grâce à la longue pratique, rapides et automatiques et ne coûtaient aucune fatigue d'attention, ennui et irrite l'aveugle de guerre et le décourage à continuer.

Mais si l'on peut l'engager à vaincre l'impatience et l'accablement des premiers jours et obtenir que peu à peu il reprenne de l'amour pour le métier auparavant exercé, on aura fait une œuvre utile, et c'est à ce résultat que visent toutes nos écoles de rééducation. Naturellement pour ce qui est des métiers qui exigent comme élément indispensable la lumière (boulangers, pâtisseries, maçons et un grand nombre d'autres), aucun aveugle de guerre ne pourra en tenter l'expérience avec probabilité de succès, de manière que ces métiers doivent, à priori, être éliminés. La catégorie des travaux auxquels les aveugles de guerre peuvent se dédier avec avantage, comprend néanmoins un nombre considérable de métiers rendus accessibles à l'aveugle de guerre, moyennant l'aide d'instruments spéciaux, qui donnent au travail de l'aveugle sûreté et précision et lui consentent une rapidité relative d'opération. Ces instruments ont été inventés par les aveugles mêmes dans le cours de leur rééducation, d'autres par les maîtres des différentes écoles ; très nombreux et intéressants pour leur usage pratique, ceux de l'école de Milan, dont les exemplaires figurent dans l'exposition qui a été inaugurée simultanément aux travaux de ce congrès. Je juge avantageux de faire observer que les instruments de travail pour les ouvriers aveugles sont d'autant plus appréciables qu'ils sont plus simples, d'une construction facile et d'un transport aisé. Un instrument de travail compliqué, lourd, machinal, coûteux, transporté avec fatigue par l'ouvrier aveugle qui retourne en famille, ou à la campagne, ou à la ville ne peut pas être aisément substitué s'il se gâte ou se détériore, et force l'ouvrier à une longue abstention du travail, laquelle sera d'autant plus longue que l'ouvrier séjournera dans une localité où le dégât de sa machine ne pourra pas être facilement réparé, ou bien si la réparation coûte un prix trop élevé pour ses ressources économiques.

Les travaux agricoles sont, pour les anciens laboureurs, devenus aveugles, les plus pratiques et correspondant à un véritable intérêt individuel et social. La colonie agricole annexée à notre école de rééducation de Florence démontre qu'aussi en Italie l'expérience de restituer à la terre l'âme et le bras de nos agriculteurs héros qui ont donné à la patrie la lumière des yeux, a été tenté sur une base solide et vaste ; cet essai a parfaitement réussi. L'exemple donné par la France et Londres et la renommée des résultats magnifiques atteints à Saint Dunstan par l'admirable activité du Dr. Pearson ne pouvait pas rester sans imitateurs.

dans notre pays, “ *alma mater frugum*, ” qui sera particulièrement redevable de son succès dans l’avenir à l’essor de la vie agricole.

Les conditions propices à l’agriculture, dont les militaires aveugles logés dans la maison de rééducation à Florence peuvent profiter, y ont rendu possible ce qui ailleurs ne l’aurait pas été. Grâce à la situation des terrains disponibles, l’expérience a été tentée avantageusement à Florence, dans la classique Toscane qui possède une longue tradition de sages pratiques pour la culture des champs. Là, le nombre des laboureurs est beaucoup plus élevé que celui des artisans et des ouvriers industriels, et grâce aux contrats coloniques basés sur le “ *métayage* ”—d’après lequel le laboureur a le droit sur la moitié du revenu de la terre cultivée par lui-même, les paysans s’affectionnent à la terre plus que dans les autres régions.

Je juge opportun, à ce point, de citer quelques passages de la belle relation que le commandeur Gioli, directeur de l’école de rééducation de Florence, publia dans les derniers mois de l’an passé et qui dépeignent au vif le caractère et les buts de l’œuvre si dignement dirigée par lui.

“ Vu que le plus grand nombre de ces soldats appartiennent
 “ aux classes agricoles et qu’il est conséquemment constitué
 “ d’aveugles éloignés des centres industriels, il nous paraît con-
 “ venable, si l’on veut faire une chose vraiment pratique,
 “ d’assujettir les laboureurs aux travaux qui, pour la simplicité
 “ des instruments nécessaires à les effectuer, et pour la facilité
 “ de se procurer la matière première nécessaire, se prêteraient
 “ assez facilement à être alternés, à l’occasion, avec d’autres
 “ travaux que le laboureur aveugle peut encore accomplir.

“ Il en résulte que notre institut, voulant rendre les élèves à
 “ leur propre milieu, ne jugea pas à propos de créer, au début, un
 “ trop grand nombre de métiers et se limita particulièrement à
 “ quelques-uns seulement.

“ C’est pourquoi l’on installa d’abord des travaux de vannier,
 “ de fabricant de balais en tous genres, de brossier, etc., et, de
 “ même, la préparation des cages à huile, en jonc ou en liège,
 “ la couverture des chaises en jonc, la fabrication des cordes et
 “ d’objets en plumes, la couverture des dames-jeannes en paille, la
 “ couverture des chaises cannées en roseau, le travail agricole,
 “ dans certaines limites ; mais tout cela, dans la ferme intention
 “ de lui donner tout le développement qu’il mérite sous le triple
 “ rapport social hygiénique et économique, car chacun connaît
 “ l’attrait que la terre exerce toujours sur les sujets qui lui sont
 “ attachés par des traditions indescriptibles, des souvenirs aigus
 “ et persistants, sources d’inépuisables nostalgies”

Le rapport s’étend en cet endroit à la nomenclature d’autres genres d’occupations tant ouvrières qu’intellectuelles qui ne manquent pas à l’école de Florence, puis elle s’attarde encore avec complaisance à propos du développement donné à la section agricole à l’imitation de ce qui se fait à St-Dunstan, et il continue :

“Jusqu’ici il nous a été possible, durant les saisons convenables et sous la direction d’un agriculteur aveugle d’une habilité surprenante, de démontrer à nos hospitalisés quelles vastes possibilités restaient encore à l’aveugle surtout lorsque son travail s’appliquerait à des terrains qu’il aurait connus alors qu’il voyait et dans des opérations qui lui étaient familières. Aussi, dans l’attente de pouvoir réaliser le dessein d’une section complète qui comprenne les travaux de jardinage, d’horticulture, de fruticulture, de polliculture, de conigiculture, d’agriculture, nous avons réussi, grâce à l’aide d’un excellent professeur ‘voyant’ à démontrer à nos agriculteurs aveugles ce qu’ils n’auraient jamais cru possible de pouvoir faire et qu’en reournant dans leurs familles, ils n’auraient peut-être jamais osé essayer.”

Celui qui visite l’Ecole de Rééducation de Florence (qui maintenant, par suite d’une grave maladie du Comm. Gioli, est sous la direction du Lieut. Aurelio Nicolodi, trentin, aveugle de guerre, qui dévoue à l’assistance de ses compagnons d’infortune, comme jadis à la libération de son pays, toute l’ardeur de son âme enthousiaste, demeure stupéfait de la désinvolture avec laquelle les militaires aveugles y accomplissent la taille des vignes, les greffes, la fauchaison, etc. en chantant au soleil les vieilles chansons qui se répandent dans l’air libre comme un hymne à la vie.

Mais, une fois que l’on a constaté, avec pleine satisfaction le résultat remarquable de la rééducation, tel qu’on l’obtient à Florence, il ne faut pas dissimuler que même si toutes les écoles de rééducation instituées en Italie s’étaient modelées sur celle de Florence, elles n’auraient nullement correspondu aux exigences spécifiques de certaines régions où les travailleurs sont de préférence des ouvriers auxquels il faut une rééducation qui permette la réadaptation graduelle aux anciennes habitudes de vie.

Il convient aussi de faire observer que l’expérience démontre qu’il n’est pas nécessaire de donner à l’ancien paysan une rééducation systématique dans les travaux pour qu’il puisse reprendre en partie, s’il en sent quelque attrait, et, avec l’aide d’un “voyant,” ses anciennes occupations. Il en est tout autrement pour le mutilé des membres qui doit exercer le tronçon et employer l’appareil de prothèse du travail et qui n’arriverait à reprendre l’habitude et la capacité au travail sinon au moyen de l’exercice systématique et continu sous la direction d’une personne compétante.

Parmi les aveugles (paysans), rééduqués dans les écoles de Rome, de Milano et d’ailleurs, beaucoup ont repris l’ancien travail, compatiblement avec leur cécité, spontanément, de retour dans leur famille, et cela parce qu’une fois la confiance rentrée chez l’aveugle d’une certaine capacité au travail, il n’a pas besoin pendant la rééducation de s’exercer dans tous les travaux auxquels il se sent incliné et qui peuvent être compatibles avec ses facultés pour se persuader qu’il pourra s’y dédier ; dans ce cas,

la rééducation donnerait des résultats trop empiriques et restreints et le rééduqué ne serait plus qu'une machine propre à exécuter les seules opérations qu'on lui a apprises. Par contre, si sa rééducation sensorielle est suffisante, il devra sortir de l'école non pas tant habile à exercer une série déterminée de travaux agricoles ou manuels (trop bref est le temps assigné par la loi à la rééducation de l'aveugle de guerre pour que l'on puisse espérer qu'il acquière à la fin de cette période la pratique de n'importe quel métier), mais plutôt disposé à lutter avec les difficultés qui pourront éventuellement surgir dans l'application de l'activité qui devra lui apporter le meilleur bénéfice et l'obtention d'un véritable réconfort moral.

Si notre paysan voulait se consacrer au jardinage, à l'horticulture, à l'élevage des poules et des lapins, formes spécifiques d'activité qui se déroulent dans un espace restreint et déterminé et qui seraient conséquemment adaptées à nos aveugles de guerre, et si comme il arrive en tant d'autres pays d'Europe, et particulièrement en Angleterre, il comprenait la valeur d'une instruction de caractère scientifique et méthodique sur ce terrain, la rééducation spécifique pourrait, en ce cas, être utile aux paysans dans ce genre d'activité avec le secours l'instruments de travail spéciaux. Mais on ne peut malheureusement pas le nier, toute préparation intellectuelle et morale vers ce but manque dans nos campagnes et une tentative faite à l'école de rééducation de Milan pour pratiquer un cours d'élevage de poules et lapins n'a pas réussi, parce qu'y manque l'intérêt des paysans en rééducation, railleurs par atavisme de tout ce qui est méthodique ou système, et fidèles aux habitudes d'élevage irrationnelles, qui se pratiquent généralement dans nos campagnes. On pourrait objecter que l'efficacité de la rééducation résiderait précisément dans la capacité de vaincre certains préjugés : mais quand bien même on arriverait à vaincre la résistance de l'élève en rééducation, celui-ci serait-il en mesure, une fois de retour dans sa famille, de vaincre le misonéisme de l'ambiance ?

Les occupations auxquelles se dédient les intellectuels dans les écoles de rééducation italiennes sont dans l'ordre des vocations individuelles, à peu près les mêmes que celles auxquelles ils se dédient dans les autres pays belligérants. Le massage, l'étude des langues, l'accord des pianos, la musique, les études commerciales et selon le degré de préparation antérieure, les études en vue d'obtenir même un diplôme de docteur.

Les officiers aveugles de guerre, qui ont été en grande partie réunis pour leur rééducation dans une belle villa de Florence, se dédient aux diverses occupations susdites, mais il ne manque pas non plus de simples soldats qui démontrent une réelle vocation aux études plutôt qu'à l'apprentissage des travaux manuels ou à la réadaptation à l'exercice des métiers par eux pratiqués antérieurement ; et il ne manque pas l'ex-paysan qui se passionne pour la lecture en " Braille " et qui se livre à l'étude en vue d'obtenir, au moins, le certificat de licence élémentaire ou l'ex-ouvrier qui, ayant subi, outre la lésion totale des yeux d'autres mutilations encore (celle d'un membre ou d'une portior

de membre) se dédie à la téléphonie et à la dactylographie pour en faire l'occupation et la ressource économique de sa vie.

Pour les enseignements de la lecture et de l'écriture en Braille, en noir ou en Ballu, on se sert dans les écoles italiennes de diverses méthodes : à Naples, l'enseignement individuel est complété par l'enseignement collectif, qui suscite chez les soldats aveugles le désir de rivaliser avec les élèves civils, parmi lesquels ils vivent en parfaite harmonie. La directrice de l'Ecole de Rééducation de Naples, suave figure de religieuse franciscaine (ordre non contemplatif), au séculier Adélaïde Tamaio, fille du Sénateur Tamaio, garibaldien, avec lequel elle partagea jusqu'à l'âge de 24 ans le travail de bureau et de vie publique, inspirée d'un haut esprit patriotique, emportant de la vie une vision exacte, pratique, très juste, sans restriction de parti-pris ou de préjugé religieux, se complaît de l'harmonie qui règne entre des éléments pourtant si disparates militaires et civils, qui sont accueillis dans son Institut. Et, de fait, celui qui visite l'Ecole de Rééducation qu'elle dirige reçoit aussitôt l'impression du sentiment de doux recueillement et de fraternelle bonté dans lequel vivent les aveugles de guerre à côté des élèves grands et petits, aveugles-nés, pour lesquels le Patronage National " Margherita " a créé depuis plus de trente ans la Maison de Rééducation qui leur donne l'hospitalité. Les uns à côté des autres font des travaux de vannerie, d'usage pratique ou de luxe, et lis atteignent dans leur confection un degré très voisin de la perfection ; ils relient des livres à la fois avec élégance et solidité, ils font des nattes pour fenêtres, de la sparterie et des tapis de cocco—travaux simples avec des exercices de dactylographie, l'étude de la sténographie et même de la musique pour ceux qui en ont la vocation ; le tout organisé avec la sollicitude particulière d'un cœur qui suscite la confiance dans l'esprit de ses élèves.

Les écoles qui ont donné la majeure impulsion aux travaux manuels, en sortant du cercle restreint des métiers reconnus adaptés aux aveugles pour expérimenter leur aptitude à apprendre des métiers plus compliqués sont celles de Rome, etc., surtout, de Milan. A Rome, sous la suggestive influence d'Augusto Romagnoli, qui dirige cette Maison de Rééducation, se sont développés des ateliers pour le travail du bois (menuiserie) et pour le travail du cuir (cordonnerie, sellerie) sur des principes vraiment modernes, avec des résultats véritablement satisfaisants.

Nous avons déjà eu l'occasion de faire allusion à subtile différence que M. Romagnoli relève entre l'aveugle né et l'aveugle devenu tel à l'âge adulte. C'est la raison pour laquelle son système d'éducation vise à reconstituer psychiquement l'homme et à le réadapter à l'ambiance avec une rééducation sensorielle méthodique et organique plutôt qu'au soin empressé de lui faire apprendre des métiers faciles dans l'exercice desquels, en peu de temps s'engourdit son esprit et se dessèche dans son âme toute aspiration à revivre dans la Société commune. Celui qui lira les données statistiques de l'Ecole de Rome annexées en appendice, notera que parmi les matières d'enseignement se trouve *l'orientation* et qu'en marge une apostille fait l'observation suivante :

“ Cette partie de la rééducation est considérée par nous comme la plus importante ; aussi est-elle inscrite parmi les matières obligatoires d'enseignement.”

Il n'est pas difficile de comprendre que, dans cette phrase, est réellement contenu tout un programme qui embrasse l'avenir de l'individu devenu aveugle avec un plus profond esprit d'humanité que tout ce que l'on pourrait trouver dans d'autres programmes plus détaillés en vue de la rééducation des soldats aveugles.

Qu'est-ce, en effet, que l'aveugle de guerre, au moment où, de l'hôpital où lui a été notifiée sa condamnation, il passe à la Maison de rééducation, sinon l'être qui se sent perdu, l'être sans chemin, l'atome dans l'espace, où toute forme, toute couleur, toute beauté s'est trouvé engloutie dans le gouffre noir où il a été précipité et qui lui enlève même avec le soleil, la perception du temps ? Faites que cet individu s'oriente dans l'obscure et vous l'aurez sauvé. Et quand Mr. Romagnoli parle d'orientation, il n'entend pas seulement indiquer cette faculté par laquelle un individu sait se mouvoir sans embarras, évitant les obstacles durant une promenade et se diriger de droite à gauche suivant la position du but qu'il se propose ; mais il entend rallier toute les facultés de l'individu, et principalement celles que le secours dominant de la vue avait auparavant laissées inertes ou passives, les mettre en relation directe avec les choses environnantes, les faire servir de nouvel intermédiaire à ses sensations, susciter, en somme, par la rééducation systématique des autres sens, méthodiquement exercés chez l'individu qui, d'abord en *voyant* les choses, avait non seulement la sensation de leur couleur et de leur forme, mais encore de leur poids, de leurs dimensions, du son qu'elles pouvaient rendre, de l'odeur et du goût qu'elles pouvaient avoir, une seconde vue, pour ainsi dire, d'*induction* ou d'*intuition* qui substitue la perte de la vue.

Ainsi réadapté à l'ambiance, l'individu se sera en partie retrouvé, il ne sera plus l'être passif, capable d'accomplir seulement les opérations qui lui auront été enseignées, mais il cherchera par lui-même les subsides convenables de travail, il s'ingéniera à modifier son ambiance en harmonie avec les moyens dont il disposera, il travaillera à se créer son monde qui pourra aussi être le même que celui des “ voyants ” avec des reflets différents pour l'un ou pour les autres, mais non tels que la vie de travail en commun devienne incompatible.

La rééducation étant comprise de cette manière, l'on peut donner un développement à tous ces métiers d'apprentissage difficile dont l'exercice concourt à la fois au progrès de l'éducation sensorielle et prépare lentement cette orientation nouvelle qui sera le vrai fondement sur lequel l'homme devenu aveugle pourra reconstruire son avenir.

Dans l'Ecole de Rééducation de Milan que j'ai eu, dès le principe et que j'ai encore à présent l'honneur de diriger, je crois avoir instinctivement interprété, autant qu'il m'a été possible, à l'encontre même de certaines idées courantes, les principes

informateurs profond esprit de l'œuvre de rééducation suivie par l'illustre Maitle Romagnoli.

Parmi les matières d'enseignement, l'*orientation* ne figure pas dans notre programme, mais à l'orientation du soldat aveugle tend toute notre œuvre éducative, de manière à refaire de cet être qui se sent perdu, l'homme capable de reprendre la place qui lui revient dans la société de ceux qui voient, capable de retirer de la rééducation les éléments d'une nouvelle vie de travail rémunérateur et source de confort moral.

Du petit tableau annexé résultant tous les métiers qui forment l'objet de l'enseignement comme aussi les cours d'études institués pour ceux qu'on appelle "intellectuels." Parmi les métiers, nous avons celui du travail en papier-mâché, facile et rémunérateur (au moins en temps normal) et celui de la construction des cuvelles, qui donne des résultats vraiment admirables, l'aveugle pouvant accomplir par lui-même tout l'article, y compris la construction du fond et l'encerclement en fer, sans recourir à l'aide de qui que ce soit, et d'obtenir une confection parfaite. Le travail de charpentier et de cordonnier procède également très bien, de manière à laisser espérer que l'œuvre de nos rééduqués puisse être appréciée à sa valeur intrinsèque, et non en raison d'un sentiment de pitié qui pourrait s'atténuer avec le temps et qui n'est certes pas un facteur durable de succès pour celui qui en est l'objet.

PLACEMENT AU TRAVAIL DES AVEUGLES REEDUQUES.

Travail collectif des Aveugles dans les Organisations spécialement créées dans ce But.

Comme l'œuvre de rééducation ne peut être considérée comme ayant en elle même sa propre fin, ainsi ne peut-on abandonner le rééduqué à lui-même après la rééducation, surtout pour la raison que l'ambiance sociale n'est pas encore préparée à le recevoir.

"Où le soldat aveugle devra-t-il exercer son métier?" Telle est la question que se pose Paul Emard, Directeur de la Maison de Convalescence des Soldats Aveugles de la rue de Ruilly à Paris, dans son magnifique rapport sur l'œuvre développée durant ces années de guerre: "A domicile? dans les ateliers, parmi ceux qui voient, ou dans des ouvriers expressément organisés pour lui?"

C'est une question que se posent peut-être tous ceux qui se sont intéressés ou s'intéressent à ce problème, car on ne voit pas encore jusqu'à quel point l'aveugle rééduqué puisse, même après la rééducation reçue, se considérer comme diminué, jusqu'à quel

point sa productivité économique puisse être appréciable et appréciée, jusqu'à quel point il éprouverait l'inconvénient du retour au pays natal, s'il ne trouvait dans sa famille des conditions d'ambiance favorables ni pour son propre travail si pour ses propres aspirations morales; jusqu'à quel point il se trouverait à l'aise en compagnie d'ouvriers doués de la vue dans les ateliers ordinaires ou dans la compagnie d'ouvriers aveugles dans les organisations spéciales expressément créées pour eux.

Le problème soulève un intérêt d'autant plus grand et suscite d'autant plus la perplexité, qu'il s'agit de tracer les lignes sur lesquelles se développera l'avenir des personnes qui nous sont sacrées, en raison du sacrifice immense que le pays en a réclamé et de l'immense douleur dont leur vie a été pénétrée, que nous voudrions arracher à une sorte d'incertitude et peut-être de tribulation, tout en respectant ce trésor moral qui est la lumière intérieure de ces infortunés, cette dignité personnelle qui les grandit d'une beauté superbe dans le malheur, et que la rééducation a ravivée, en les retirant d'un état d'égarement pour les rendre à la confiance de pouvoir être encore, dans la vie et dans la maison, pour eux et pour les autres, une force vive et utile.

En examinant dans les solutions déjà énoncées par certains et qui peuvent, au premier abord, paraître plus compréhensibles et persuasives que les autres, se présentent aussitôt celles qui militent en faveur du travail collectif des aveugles dans des organisations spéciales expressément créées à cet effet et qui peuvent avoir deux formes diverses :

- (1) Maisons de travail pour ouvriers aveugles seulement, sous le patronage et la direction de "voyants."
- (2) Coopératives de travail entre ouvriers aveugles, avec ou sans la collaboration de personnes douées de la vue.

On apporte, au soutien de la première manière, une foule d'arguments qui découlent des opinions les plus courantes sur la potentialité de travail et de rendement de l'ouvrier aveugle, sur l'incapacité de l'aveugle à supporter la concurrence de celui qui voit et l'on suppose *a priori* que la vie de travail en commun avec ce dernier serait trop souvent, pour telles et telles raisons (ex. la difficulté de se mouvoir dans l'atelier trop vaste parmi les machines et les outils qu'il ne connaît pas, le besoin continu de l'aide d'autrui et de ses petits services, la lenteur à passer d'une opération à une autre, etc., etc.), une cause d'humiliation pour ceux auxquels nous voulons, au contraire, préparer une existence joyeuse et sereine. Et voici se profiler l'idée de l'atelier des aveugles sous la surveillance de professeurs doués du sens de la vue et sous la tutelle d'un patronage qui prenne soin du développement de l'atelier en en alimentant la vie plus ou moins artificiellement jusqu'à ce que tous les ouvriers soient mis à même de retirer de leur travail un gain appréciable et satisfaisant. Mais à côté de cette idée en voici s'en profiler immédiatement une autre, d'après laquelle les ouvriers aveugles devraient également pouvoir établir leur atelier, mais en pourvoyant eux-mêmes à son installation et à son organisation, en profitant plus ou moins de la

collaboration des gens qui voient, suivant qu'ils la retiendront nécessaire ou non, mais comme des individus libres qui se sentent solidaires et qui se contribuent une existence de travail en commun afin de pouvoir à la fin de l'année se partager les gains ou supporter avec des sacrifices égaux les passivités.

Entre ces deux propos de solution qui toutes deux découlent aussi de la conception du travail collectif des aveugles dans des organisations créées expressément dans ce but, il y a une grande différence fondamentale : l'une démontre, si l'on observe bien, fort peu de confiance dans la réadaptation à la vie de travail obtenue par l'aveugle durant sa rééducation ; l'autre, au contraire, la confiance absolue non seulement dans la capacité productive des aveugles de guerre rééduqués, mais aussi dans leur aptitude à réaliser une organisation de travail qui demande l'esprit d'initiative, des qualités de direction, le sentiment de la responsabilité, le sûreté du jugement, la confiance réciproque, et qui certainement donnerait aux aveugles le moyen de développer leur activité d'une manière complètement libre et digne dans le monde de ceux qui voient.

Il n'y a pas lieu de croire que les ouvriers aveugles qui entreraient dans la maison de travail organisée de la première manière se trouveraient matériellement mal à l'aise : loin de là. Ils auraient le travail assuré et, ce qui importe le plus, le *gain* assuré : aucun souci ni préoccupation pour la vente des produits. Même les ouvriers voyants qui travaillent à façon ne sont tenus qu'à accomplir leur travail, mais tandis que ceux-ci doivent produire suffisamment pour assurer encore, avec leur journée de travail, le bénéfice du patron, les aveugles de la maison de travail trouveraient facilement moyen, s'ils étaient un peu courageux d'éviter la fatigue avec la certitude de ne pas être jetés sur le pavé, pour des raisons évidentes qu'il n'y a pas besoin d'énumérer.

Et puisque rien ne serait négligé pour varier leur vie et l'égayer à l'aide des divertissements et distractions compatibles avec leur disgrâce, et puisqu'ils auraient la liberté d'abandonner la maison de travail quand il leur plairait (qui peut, en effet, songer à une espèce de contrat par lequel un ouvrier quelconque s'obligerait à passer toute sa vie dans une maison de travail, fût-elle même un Jardin de Délices?), beaucoup en viennent à conclure que cette solution est la meilleure de toute pour l'établissement des aveugles de guerre.

Eh bien, si, au lieu de créer des maisons de rééducation, on avait au fur et à mesure réuni dans des maisons de travail de ce genre les militaires devenus aveugles, et si l'on avait offert, à ceux qui l'auraient désiré, la distraction de quelque travail simple et rémunérateur, facile à apprendre, en échange d'une hospitalité dont ils auraient pu profiter, sans limite de temps, pour tout le reste de leur vie, nous aurions trouvé conforme au sentiment dominant de dévotion et reconnaissante admiration pour les survivants de la guerre une telle initiative destinée à garantir aux aveugles de guerre la sécurité de l'avenir sous une forme vague d'assistance charitable qui, sans offenser leur dignité, pouvait

assumer la tâche de pourvoir à leurs besoins pour le reste de leur vie. Mais puisque, par le moyen de la rééducation, nous avons voulu restituer aux aveugles de guerre ce sentiment de confiance dans leurs forces qui est la conséquence de la nouvelle orientation qu'ils ont atteinte, pourquoi devrions nous la leur reprendre par l'offre d'une combinaison qui repose sur le préjugé d'une irréductible infériorité de leur part?

D'un autre côté, qui peut affirmer avec certitude que pour les aveugles, en qui revivent, par l'efficacité de la rééducation les aspirations d'antan, cette vie de travail en communautés constituées seulement de leurs compagnons d'infortune soit une perspective bien agréable et non point plutôt une adaptation nécessaire à laquelle l'aveugle se pliera, non parce qu'il se retient incapable d'associer son labeur à celui de ceux qui voient, mais parce qu'il comprend que les autres pensent ainsi? Si une maison de travail pour aveugles seulement, dirigée par des gens doués de la vue sous la tutelle d'un Patronage, venait à être créée avec le caractère d'un refuge où ils pourraient en cas de désoccupation ou d'autre cause temporaire, se trouver à travailler ensemble, pour un temps plus ou moins long, ces aveugles, que la guerre a rendus compagnons et le malheur amis, et qu'ils pourraient se raconter mutuellement les luttes, les difficultés vaincues, les victoires remportées, les désillusions souffertes, les projets d'avenir et que chacun puisse ensuite reprendre sa route pour se retrouver encore plus tard et recevoir quelque lumière de l'exemple et du conseil des meilleurs, à cette maison nous voudrions offrir le plus large concours de notre sympathie et de notre approbation.

Mais à une maison de travail où les meilleurs peuvent être confondus avec les pires, qui deviendrait avec le temps un refuge de gens presque oisifs, petit monde d'intérêts formant un cercle fermé où les ouvriers aveugles cesseraient d'être de libres citoyens, parce qu'ils y devraient subir nulles influences de la part de qui pourvoirait à compléter leur gain ou à soutenir les dépenses d'administration et de fonctionnement de la maison même, à cette organisation de travail collective entre aveugles, nous ne croyons pas pouvoir accorder notre entière approbation. D'autant plus qu'une fois créée et soutenue les largesses de ceux qui, par paresse ou misonéisme naturel, voudraient ainsi se dérober à la nécessité de coopérer sous une autre forme plus directe à l'établissement des ouvriers rééduqués, cette maison pourrait compromettre l'expérience de l'association du travail entre ouvriers aveugles et ouvriers voyants, qui est destinée, peut-être à donner des résultats inespérés. Rien ne nous empêche de supposer, en effet, qu'à l'ouvrier aveugle qui viendrait lui offrir sa main d'œuvre un patron répondrait d'avoir contribué à lui préparer la maison de travail qui lui est plus adaptée, afin qu'il en profite et non pour qu'il l'abandonne. Trente, quarante, peut-être cinquante ans de vie dans une maison de travail pour ouvriers aveugles, sans les excitantes et utiles angoisses du lendemain, sans les encouragements qui naissent réellement des contrastes et des contacts avec la vie réelle et complète, étang

doux et tranquille offert au rééduqué, peut-être, pour le soustraire aux difficultés de l'existence, mais où s'engourdiraient toutes ses meilleures énergies personnelles et où tout sentiment vivant de responsabilité serait destiné à s'évanouir en peu de temps, ne constituent pas, à bien y réfléchir, un avenir vraiment satisfaisant pour celui qui aura retiré de la rééducation tout ce que celle-ci s'est proposée de lui donner.

La seconde forme d'organisation spécialement créée en vue du travail collectif des aveugles, c'est à dire leur constitution en coopérative ouvrier, se présente avec des inconnues dont on ne saurait *a priori* préciser la valeur exacte, mais elle dérive de la meilleure observation des résultats de la rééducation, selon les buts qu'elle s'est proposée, et elle n'en est qu'un corollaire spontané sinon nécessaire.

Lorsque Paul Emard écrit qu'il faut aux aveugles, pour certains travaux, des ateliers organisés d'une manière spéciale, fournis de matériel et de personnel *ad hoc*, avec des outils fabriqués exprès, il n'exclut certes pas que cette organisation puisse être l'œuvre des intéressés eux-mêmes, lesquels, placés dans une ambiance qui suivrait avec sympathie leurs efforts et contribuerait à leur succès au moyen de facilités particulières, se sentiraient vraiment réintégrés dans leur vie commune. La difficulté de la lutte économique stimulerait leurs énergies personnelles; le choix des travaux deviendrait peu à peu, par effet de l'expérience, proportionné et correspondante aux exigences du marché, l'éventuelle collaboration de l'ouvrier voyant serait rémunérée et soumise, afin d'éviter les exploitations, au contrôle d'une sorte de syndicat composé de personnes autorisées; les oisifs (mais il n'en resterait pas devant l'exemple de l'activité d'autrui) serait exclus, et tous les autres, dans une belle solidarité fraternelle d'aspirations, se sentiraient fiers de la liberté d'une vie active à laquelle le cécité aurait dû leur faire renoncer. Tous se perfectionneraient toujours de plus en plus dans l'exercice du travail préféré, animés du légitime désir d'un meilleur gain, et leur monde ne serait pas étroit, parce que les associés se mettraient d'eux-mêmes, sous intermédiaires, en relation avec les grands courants de la vie économique, de manière à y participer avec le concours exclusif de leurs propres forces.

Une organisation de ce genre aurait peut-être dans le principe un élément de faiblesse dans l'inexpérience des intéressés, auxquels il aurait à conseiller qu'avant de s'accorder pour un travail collectif, ils s'essaient quelque temps d'abord dans des ateliers d'ouvriers "voyants," afin de se spécialiser chacun dans quelque forme déterminée du travail auquel ils donneraient ensuite développement dans la coopérative.

Que la communauté d'intérêts puisse ensuite susciter des divisions, des défiances, des malentendus entre les associés, et que, par suite de ces faiblesses purement humaines, la vitalité de la coopérative puisse être même compromise, c'est là une chose que l'on ne peut prévoir, mais qu'on ne saurait exclure. En tous cas, en prévoyance d'un tel danger, serait-il opportun

de refuser l'approbation de sympathie à une expérience qui mettrait à vif la mesure de l'efficacité des résultats surtout moraux, mais aussi matériels que la rééducation peut produire à l'avantage de l'individu et de la Société?

Travail individuel autonome des Aveugles dans les Formes habituelles communes a ceux qui voient dans les Conditions normales d'Embauchage.

Tout comme les " voyants " les aveugles qui ont appris un métier peuvent se mettre à l'exercer sans recourir aux organisations expressément créées pour eux, dont on a parlé ci-dessus.

Le travail individuel à domicile est celui qui pour la plupart des rééduqués se prête le mieux à leurs exigences familiales et sentimentales et peut offrir un rendement suffisant au bon ouvrier qui s'y dédie. Divers métiers se prêtent admirablement à être exercés à la maison, spécialement ceux qui peuvent se considérer comme les plus simples, comme ceux de brossier, empaillleur de chaises, fabricant de filets, de balais et autres articles d'usage courant, l'aveugle rééduqué sait, sans recourir à l'aide de qui que ce soit confectionner les brosses, empaillleur les chaises, faire les filets pour les bicyclettes de dames, et les sacs de dépenses; il sait en outre fabriquer les balais, les nattes et paillassons, fabriquer les pantoufles de feutres et construire aussi quelque genre de paniers il y a donc lieu de présumer qu'il s'est suffisamment préparé durant la rééducation à pouvoir satisfaire à la demande du marché de son lieu de résidence.

Ces travaux peuvent être également exercés utilement durant la saison d'hiver par le paysan aveugle de guerre, en attendant que la terre se dépouille de son manteau de neige et le rappelle au travail des champs. Celui là même qui ne sent pas d'attrait pour les travaux champêtres et qui n'a pas pu ou voulu apprendre ces métiers que Paul Emard appelle si justement intelligents (parce qu'étant plus difficiles ils sont propres à développer l'intelligence) pourra dédier toute la journée à ces occupations, qui pour lui ne seront pas complémentaires, comme pour ceux qui s'exercent dans des travaux plus compliqués, mais qui seront celles dont il pourra retirer quelque gain appréciable pour augmenter le revenu de sa pension, et pourvoir à sa subsistance propre et à celle de sa famille.

Il pourra quelquefois chômer à cause du manque de la matière première, il pourra aussi subir des alternatives dans l'excès ou le défaut des commandes, il pourra trouver des difficultés assez graves pour la vente de ses produits; mais comme je le dirai plus loin, un patronage dont l'assistance continue devra pourvoir à rendre moins sensibles et à éliminer autant que possible ces incertitudes et ces peines de la vie, de ceux qui sont spécialement dignes de la gratitude du pays.

Les rééduqués qui auraient appris des métiers plus compliqués, tels que le travail du cuir ou du bois, avec des applications diverses, pourraient même se dédier à domicile, avec ou sans la collaboration des voyants, à une forme que j'appellerai plus évoluée de travail individuel autonome. Le Sellier, par exemple, pourrait très bien avec la seule aide de sa mère, de sa sœur, ou d'un membre quelconque de sa famille préparer et confectionner des harnais et des brides. Un jannier pourrait aussi presque sans aucune aide, confectionner entièrement ses paniers. Le fabricant de cuvelles de bois, jouissant d'un local convenable, serait également en mesure de produire, avec ses outils spéciaux, ses articles sans l'aide continue d'un voyant. La journée s'écoulerait ainsi très vite pour les travailleurs qui auraient su se faire une petite clientèle et la satisfaction morale et intellectuelle de l'habileté ainsi démontrée serait le complément très appréciable du gain matériel. Le cordonnier ou le charpentier le pourraient, tout seuls, sans la collaboration d'un voyant, accomplir leur travail trop varié et compliqué, mais en ce cas la collaboration requise pourrait être de deux espèces : ou le militaire pourrait prendre, en qualité de garçon, un subordonné, auquel il assignerait un salaire correspondant à l'aide apportée, ou il pourrait offrir lui-même son travail à la journée à un artisan à titre de salarié, mais en veillant, dans ce cas, à ce qu'il ne soit pas exploité par l'avarice d'autrui. Dans l'une et dans l'autre de ses formes de collaboration, mais spécialement dans la première, le travail pourrait être pour l'homme devenu aveugle, une source inépuisable de satisfaction morale. Il est vrai que l'artisan aveugle avec l'aléa d'un gain plus considérable pourrait courir quelque risque de perdre le petit capital destiné à lui ouvrir la petite industrie ; mais le danger le rendrait attentif, vigilant, et le désir de faire fructifier son affaire, actif, industriel, et capable de perfectionner de plus en plus son propre travail. Un timide, un paresseux, de médiocre intelligence ne pourrait essayer ce chemin ; un audacieux, un intelligent l'entreprendrait avec succès.

Tout cela bien entendu, dans le cas où l'ambiance, principalement des villages de campagne, où pénétre si difficilement l'influence des idées et des aspirations modernes, ne vienne pas opposer à la bonne volonté de l'aveugle de guerre, de retour dans sa famille, toute la résistance passive de la tradition et du préjugé pour lui rendre impossible la réalisation de ses bonnes résolutions de travail et de réadaptation à la vie ancienne. La défiance, dans les milieux ruraux, encore plus répandue qu'ailleurs, en ce qui concerne la capacité de travail des aveugles, la retenue conséquente dans la commande de quelque travail, en raison aussi du sentiment presque religieux de compassion qu'ils inspirent ; la préoccupation que, s'ils travaillent, on puisse leur enlever la pension ; tous ces éléments négatifs et autres pourraient compromettre même les meilleurs résultats de la rééducation, et, dans ce cas, faudrait-il conseiller au rééduqué la résidence au pays natal, ou ne vaudrait-il pas mieux favoriser son établissement dans une ville où il puisse exercer son activité individuelle sans contraste, sans les inconvénients du préjugé et de la superstition, sans le danger de l'exploitation ?

Et voici se présenter ici le problème du travail individuel autonome du rééduqué, non plus à domicile, mais hors de chez lui, dans les ateliers communs, en collaboration avec ceux qui voient.

Pour la catégorie des rééduqués aux emplois, il n'y a pas lieu de s'étendre sur la nécessité qu'il y a de les faire admettre, tant les masseurs que les téléphonistes, les dactylographes, les dactylographes, les comptables, les correspondants commerciaux etc., etc., dans les maisons ordinaires où ils n'auront qu'à faire preuve de toute les qualités nécessaires, pour se faire apprécier. Aucun employé ne saurait être plus attentif et moins distrait que nos rééduqués. L'expérience dans ce sens a déjà été faite dans beaucoup de cas d'intellectuels frappés de cécité, tant dans le jeune âge que dans l'âge mûr, et qui ont su continuer leur ancienne profession en suscitant toujours l'admiration de tous pour le travail accompli. Mais pour les ouvriers le terrain est nouveau et leur établissement dans les ateliers ordinaires parmi ceux qui voient n'est pas considérée par tout le monde comme possible ni opportune.

L'Hon. Rinaldo Rigola, aveugle par accident, dans un rapport sur la rééducation professionnelle des mutilés à la guerre présenté au Congrès National des œuvres d'éducation populaire à Rome, écrivait à propos des aveugles de guerre : " Il faut chercher à élargir la sphère des métiers et des emplois auxquels l'aveugle pourrait être appelé. Il n'échappera à personne que dans presque toutes les industries il y a des opérations manuelles qui pourraient très bien être accomplies par un aveugle ; non seulement, mais le technicisme industriel moderne qui semble fait exprès pour éliminer l'homme de la production contraint de plus en plus les équipes à accomplir des mouvements simples et uniformes pour lesquels la vue, bien que toujours très utile, n'est pas nécessaire, comme elle n'est pas nécessaire qui tourne à la roue de l'affileur. Les téléphones et les manufactures de tabac ne sont pas les seuls qui présentent de tels caractères. . . . Toute la question se réduit à trouver le juste point d'application de la force-travail de l'aveugle."

Le Professeur H. Truc, directeur de l'hôpital ophtalmique et de l'Ecole atelier pour soldats aveugles de Montpellier, dans une relation sur les aveugles de guerre, publiée en 1917, écrit :—

" J'ajouterai même que les administrations de l'Etat (Postes et Télégraphes, etc.) pourraient ainsi spécialiser de nombreux aveugles, ouvriers ou intellectuels. Aveugles et clairvoyants feraient certainement bon ménage et s'entr'aideraient volontiers dans l'intérêt commun. Les aveugles de guerre seraient à tous égards, particulièrement sympathiques."

Mais Mr. Paul Emard se montre moins convaincu au sujet de l'entrée des ouvriers aveugles dans les ateliers communs, et comme le Prof. Denti à Milan, il se préoccupe de ce que l'ouvrier puisse être sacrifié ou opprimé ou exploité, parce que, dit-il, " la vie industrielle est une bataille qui n'admet ni indulgence ni compassion pour les faibles."

Le Prof. Denti de son côté croit que "l'aveugle ne pourra jamais fournir autant de travail manuel que celui qui voit et que si l'on le met à travailler avec celui-ci il ne pourra jamais en soutenir la concurrence."

Je pense qu'en cela, comme dans tous les autres champs de la vie réelle, l'expérience puisse seule donner une réponse sure, et que la préoccupation de l'embarras éventuel ou l'aveugle de guerre viendrait à se trouver au cas où il voudrait associer son activité à celle des clairvoyants, et la supposition de la négligence et de l'abandon dont il pourrait être la victime, ne suffiraient à justifier pas le renoncement à une expérimentation qu'une intense propagande vraiment humanitaire parmi les ouvriers et entrepreneurs voyants pourrait rendre possible en vue du triomphe que comporterait la plus complète réintégration de l'aveugle dans la vie commune.

D'autant plus que la préparation de l'aveugle de guerre, pour sa réadaptation à la vie, a rendu nécessaire la création d'instruments de travail tout spéciaux à l'aide desquels l'aveugle peut accroître la capacité productive, le perfection et la rapidité de son travail.

Au cas où l'ouvrier aveugle se spécialiserait, après la rééducation, dans quelque opération où il puisse réussir aussi bien que tout autre ouvrier habile et adroit, pourquoi ne pourrait-il pas être employé avantageusement comme ouvrier dans un atelier ordinaire? En appliquant le principe de la division du travail, comme on le fait largement dans toutes les branches de la production moderne, il pourrait être exclusivement occupé, p.e. à raboter, à condre les semelles, à préparer les douves pour les tonneaux et à d'autres opérations déterminées sur un matériel de bois ou de fer : son infériorité par rapport avec les compagnons "clairvoyants" serait ainsi très atténuée et même souvent complètement annulée par suite de la plus grande attention et de la plus constante assiduité que l'aveugle apporte à son travail. Et quand bien même sa productivité résulterait inférieure, pourquoi devrait-il se sentir humilié de recevoir un salaire correspondant à la valeur de son travail? Est-ce que parmi ceux qui voient la productivité de tous les ouvriers est égale et ne varie pas raison des innombrables individuels? Et a-t-on jamais mis en condition d'infériorité morale ceux qui parmi les ouvriers n'arrivent pas à produire autant que d'autres et qui, par conséquent, gagnent moins?

Dans le cas des ouvriers aveugles, la pension qu'ils perçoivent complèterait leur gain, même alors qu'il devrait être inférieur à celui des voyants. Ils ne se sentiraient nullement humiliés mais fiers d'un gain juste et mérité, conquis au prix de la volonté et de l'effort persévérant pour retourner au milieu de leurs compagnons de travail *comme avant*, plus aimés *qu'avant*, objets d'admiration, de respect et d'exemple.

Je pense que ces considérations peuvent induire à favoriser l'expérimentation du travail individuel des ouvriers aveugles dans

les ateliers ordinaires, même si l'on devait rencontrer à propos de ses résultats probables un fort courant de scepticisme.

Rien ne doit être laissé de côté pour tenter de rouvrir à nos aveugles de guerre une voie qui réponde mieux à leurs besoins, à leur vie matérielle et morale. Si cette expérience réussissait, quelle vie ne s'offrirait-elle pas à nos rééduqués. Une vie pleine, ouverte aux échos du monde, de ses luttes, de ses misères, de ses aspirations idéales; une vie, non sans amertumes ni regrets, certainement, mais variée, complexe et capable de rendre moins constante la sensation douloureuse de la cécité même.

M. Paul Emard se montre peu favorable à l'établissement des aveugles dans les ateliers communs parce qu'il craint aussi que la spécialisation de l'ouvrier aveugle dans une seule opération ne puisse fossiliser son intelligence et rendre son activité par trop uniforme et ennuyeuse. Cela pourrait arriver si l'ouvrier aveugle spécialisé travaillait à domicile ou seulement parmi des aveugles où il serait éloigné de l'animation et des échos de la vie commune. De plus, on doit observer que la distraction d'une série d'opérations variées pour accomplir un travail déterminé suscite l'intérêt de celui qui est devenu aveugle, surtout durant la période de sa rééducation et qu'elle s'atténue peu à peu à mesure que ces opérations deviennent habituelles dans l'exercice du métier. Au contraire, les exigences spirituelles de l'aveugle sont si complexes que seule la vie en commun peut les satisfaire, car il *sait voir même avec les yeux des autres*, ayant l'expérience de la lumière, de la beauté et un riche patrimoine d'images dans le cerveau que seul le contact avec ceux qui voient peut tenir vivant, tandis qu'il se dissiperait avec le temps dans l'habitude de vie et de travail avec les aveugles seulement; sans compter que le seul fait de l'association du travail entre aveugles et voyants, en étendant sur une très vaste échelle le défaut présumé de la capacité restreinte de chaque rééduqué, le rendrait par le fait moins sensible et comporterait en elle-même les éléments nécessaires à l'éliminer.

En tous cas, de quelque manière que l'on veuille procéder à l'établissement des aveugles de guerre, soit vers le travail collectif —organisations expressément dans ce but—soit vers le travail individuel et autonome, il ne faudra jamais négliger les caractères et les coefficients individuels des aveugles eux-mêmes, suivant lesquels, ceux-ci pourront être plus ou moins adaptés à l'une ou à l'autre forme d'activité, et l'on ne pourra jamais les soustraire à l'assistance des patronages établis expressément pour en protéger la vie avec des idées modernes et avec ce sentiment de respect pour leur fierté et leur dignité, auquel ces héros de la patrie ont le droit le plus sacré.

PATRONAGES D'ASSISTANCE ECONOMIQUE ET MORALE DES AVEUGLES.

Leur Tache pour rendre les aveugles Ouvriers autonomes.

Donner la préférence, autant que possible, à ces formes et organisations de travail qui laissent aux aveugles la plus grande liberté et qui le rapprochent plus intimement de la société de ceux qui voient, n'exclut nullement la nécessité ni l'opportunité des patronages qui offrent aux ouvriers aveugles une œuvre assidue et vigilante d'assistance morale et économique. Celle-ci sera naturellement variée suivant qu'elle aura pour objet de pourvoir aux besoins particuliers des ouvriers autonomes, occupés à domicile, dans les ateliers ou dans des emplois ou qu'elle s'occupera, au contraire, des besoins d'une collectivité d'ouvriers aveugles groupés en maisons ou en coopératives de travail.

A côté de chaque école de rééducation devrait être institué l'un de ces patronages, composé autant que possible en majeure partie des personnes mêmes qui ont initié ou qui ont soutenu l'œuvre de rééducation. Ce patronage devrait constituer un Sous-Comité ou avoir au moins un correspondant direct au chef-lieu de chaque province d'où proviennent les soldats aveugles groupés dans les divers instituts de rééducation et associer à son œuvre quelque personne active, empressée, notable qui habite la localité dans laquelle chaque aveugle rééduqué est appelé à prendre domicile et à exercer son métier.

L'aveugle qui aura appris un métier qui puisse s'exercer à domicile a besoin, à son retour au foyer, de s'assurer l'approvisionnement de la matière première qui, dans le lieu de sa résidence, peut ne pas se trouver ou de se trouver qu'avec difficulté et à prix élevé. Il devra donc, à sa sortie de l'école, être pourvu à la fois de la matière première et des instruments de travail, d'autant plus que ceux-ci présenteront quelque différence avec ceux habituellement employés, par les ouvriers qui voient, dans l'exercice de la profession. Cette fonction initiale et fondamentale de patronage est déjà accomplie dans chaque école de rééducation : et les tableaux annexés au présent rapport témoignent de la manière dont on y a pourvu jusqu'ici. Quelques écoles ont même déjà pourvu à la fourniture successive de la matière première, au fur et à mesure que s'en est fait sentir sur le besoin, comme elles ont pourvu également au changement et à la réparation des instruments de travail qui pour quelque raison que ce soit étaient devenus d'un usage difficile ou impropre.

Cette fonction pourra cependant être organisée d'une manière plus réglementaire et plus profitable. Etant donnée la circonstance que certains métiers sont enseignés, d'après les mêmes méthodes, dans toutes les écoles, une entente entre les directions de ces écoles et les patronages constitués auprès d'elles sera opportune et facile, soit pour l'approvisionnement en commun des matières premières et des instruments de travail, soit pour

l'échange de service dans leur fourniture, au cas où un ouvrier aveugle rééduqué dans une école viendrait habiter un endroit beaucoup plus voisin de la résidence d'une autre école et dans d'autres cas où cet échange de services pourrait être utile.

Son travail achevé, l'aveugle trouve difficilement à vendre par lui-même les brosses, les balais ou les filets qu'il a fabriqués, soit parce que la consommation en est trop réduite dans l'endroit où il habite, soit parce qu'il lui manque, pour quelque motif dépendant des circonstances de personne et d'ambiance, la possibilité d'en organiser la vente. Voilà une autre fonction à laquelle pourvoient déjà en partie les écoles de rééducation, mais qui pourra également être organisée plus parfaitement et avec des résultats plus avantageux, spécialement si l'on arrive aussi dans ce but à l'accord désiré entre les diverses écoles. L'on pourra, soit établir des contrats avec une ou plusieurs maisons qui s'engageront à acquérir annuellement en tout ou en partie les produits d'une catégorie déterminée, fabriqués par les soldats aveugles, soit instituer une agence spéciale qui se mette en relation avec des établissements ou magasins qui s'occupent déjà du commerce de tels produits pour leur proposer la vente des quantités qui seront au fur et à mesure envoyées par les aveugles rééduqués. Cette œuvre servira non seulement à faciliter l'écoulement des produits, mais encore à empêcher que, par la difficulté de les vendre ou sous l'impulsion d'un besoin urgent, les ouvriers ne se trouvent obligés de les céder à trop bon prix.

Pour les soldats rééduqués qui voudraient entrer à travailler comme salariés dans les ateliers ou comme stipendiés dans un emploi quelconque, le patronage a également à remplir une fonction nécessaire et de la plus haute utilité. Quelque institut de rééducation a déjà commencé depuis les premiers temps à s'occuper du placement de ceux qui peu à peu sortaient de l'école : il a, par exemple, envoyé un délégué chargé d'étudier les conditions du travail et la possibilité du placement dans le pays où le rééduqué avait sa famille et désirait s'établir, ou bien, il en a recommandé l'admission dans quelque atelier de la ville où résidait l'institut. Mais c'est là encore une fonction qui réclame une meilleure organisation. Le patronage pourra se servir aussi des bureaux de placement ordinaires institués par les organisations professionnelles ou par accord entre ouvriers et patrons ou par initiative des institutions publiques, mais il aura ensuite, dans ce cas, évidemment une tâche particulière importante et délicate en rapport avec les conditions toutes spéciales où se trouve l'aveugle en comparaison avec les autres ouvriers et employés : et cela, soit pour lui faciliter la recherche d'une occupation qui lui soit adaptée et en proportion de l'habileté acquise, soit pour faire en sorte que sa capacité productive, même en cas d'infériorité avec celle des ouvriers qui voient, soit cependant appréciée dans son intégrité et rémunérée dans une mesure correspondant à sa valeur effective ; de manière que ni les aveugles n'aient à subir une injuste exploitation ni l'ouvrier qui voit ne

puisse trouver en eux, même s'ils sont en petit nombre, des concurrents de nature à provoquer la baisse des salaires.

Il ne suffit pas, naturellement, d'avoir pourvu à un premier placement. Celui-ci pourra bien rarement être stable ; il ne sera même postres fréquent qu'il puisse valoir pour une période de longue durée. Il pourra souvent, au contraire, n'être qu'un essai relativement court. Il peut arriver que l'établissement ou l'atelier où l'aveugle, ouvrier ou employé travaille vienne à se fermer ; que celui-ci ne trouve pas dans l'endroit où il est occupé une ambiance convenable ; que le travail choisi ne corresponde pas à ses aptitudes ; il peut arriver enfin que, par une de ces mille circonstances qui surviennent même à ceux qui voient, l'aveugle se trouve désoccupé. Dans tous ces cas, il devra sentir, prompt et vigilant, l'appui du patronage, chaque fois qu'il ne réussira pas à se trouver par lui-même une occupation convenable. Mais cet appui n'obtiendra pas toujours le résultat souhaité, soit parce qu'une crise se sera manifestée dans certains genres de métiers, soit qu'il y ait exubérance de main d'œuvre, soit pour toute autre cause. Tant que durera la guerre et tant que son souvenir récent demeurera aigu et émouvant, l'aveugle pourra peut-être compter, dans ces circonstances, sur la pitié et sur la reconnaissance qui lui sont dues et espérer quelque préférence sur ceux qui voient, mais, par la suite, il ne devra compter que sur la valeur de ses capacités professionnelles et il sera conséquemment sujet, comme tous les ouvriers, à l'aléa d'un chômage momentané.

Le patronage doit se préparer à faire face à cette éventualité moyennant le placement des aveugles dans une maison de travail pour voyants comme celle que la Société Humanitaire a entretenue à Milan, jusqu'à l'entrée en guerre de l'Italie, pour y accueillir les ouvriers temporairement désoccupés, ou dans une maison de travail expressément instituée pour y faire travailler, à titre temporaire ou définitif, les ouvriers aveugles qui ne pourraient trouver ou ne voudraient chercher du travail ailleurs ou encore dans un atelier, comme celui qui existe déjà sous le nom de "*Laboratoire Zirotti*," à l'institut des aveugles de Milan, où l'on emploie dans divers métiers les ouvriers aveugles de la ville qui n'ont pas d'autre occupation.

Quelle coopération devront prêter, pour l'obtention de tous ces résultats, les sous comités ou les correspondants choisis dans les divers chefs lieux de province et dans les villages et cités où résident les aveugles ? Il est facile de le comprendre. Il leur appartient de suivre avec une attention vigilante et affectueuse l'aveugle dans son activité, de lui offrir un appui dans les moments où il courra le danger de se sentir vaincu par les difficultés qu'il rencontre sur son chemin, de lui donner aussi les conseils et les concours pour lesquels il n'est pas nécessaire de recourir au patronage ; il leur appartient ensuite de transmettre à ce dernier les demandes des aveugles, en les accompagnant des indications opportunes, de donner au patronage toutes les informations requises sur l'assiduité de l'aveugle au travail et sur le profit qu'il en retire, sur les conditions du marché local, en ce qui concerne

le placement de la main d'œuvre, le réapprovisionnement de la matière première, l'écoulement des produits etc.

Ces informations devront également servir au patronage pour l'attribution des prix d'encouragement, dont l'institution s'est déjà démontrée si opportune comme un stimulant à l'activité de certains rééduqués qui, peut-être, sous l'influence déprimante du milieu où ils retournent vivre, spécialement dans les campagnes, se trouveraient tentés de négliger les nouvelles aptitudes au travail qu'ils ont acquises et de se contenter de vivre du montant de leur pension et de l'aide qu'ils peuvent attendre de la solidarité de leurs amis et de la pitié de leurs concitoyens.

L'œuvre des sous-comités et correspondants locaux sera de la plus haute utilité pour tout ce qui concerne le confort et l'assistance de l'aveugle rééduqué, même dans les diverses contingences de sa vie familiale. Il y a déjà beaucoup d'aveugles, par exemple, qui ont senti le besoin d'illuminer d'un sourire d'amour les ténèbres de leur vie et qui ont trouvé une créature qui a accepté bien volontiers de devenir leur compagne affectueuse et dévouée. Il peut y avoir dans ce cas mille doutes et problèmes à résoudre : Est-ce que je fais bien de me marier ? Est-ce bien la personne qui puisse me donner la compagnie, l'affection, l'appui dont j'ai besoin ? Dois-je l'introduire dans la famille de mes parents ou former un nouveau foyer ? Il y a ensuite la question et le choix du trousseau, de la maison, du mobilier ; et, plus tard, la naissance d'un enfant, etc., etc. Voilà autant de circonstances où la parole et le conseil d'une personne amie peuvent rassurer l'esprit de l'aveugle et lui indiquer son chemin.

Mesures à prendre pour l'Installation de l'Habitation de l'Ouvrier aveugle autonome.

Une tâche peu lourde, mais cependant utile et délicate, que le patronage devra assumer est l'installation de l'habitation de tous les aveugles rééduqués qui ne pourraient pas trouver moyen d'exercer l'habileté acquise dans la localité où réside leur famille et qui se trouveraient conséquemment dans la nécessité de se transférer dans quelque centre plus important ou mieux adapté. Cette tâche pourrait même assumer une ampleur et une importance plus grande si, au lieu de pourvoir cas par cas, au fur et à mesure que s'en manifeste le besoin, le patronage voulait prendre l'initiative de pourvoir au placement, dans les plus grandes villes et plus spécialement dans les cités où ils ont déjà été rééduqués, de tous ces aveugles qui n'ont aucuns désirs, motifs ou intérêts spéciaux de retourner ou de demeurer dans le lieu de leur ancienne résidence. Et, de fait, il est tout naturel que dans ces villes les aveugles rééduqués pourraient être mieux protégés et guidés, qu'ils n'y subiraient pas l'influence déprimante, comme il a été dit—de certains petits villages où la défiance préconçue sur la capacité lucrative des aveugles, d'étranges préjugés moraux et des manifestations plutôt nuisible de compassion et de sympathie envers ces infortunés, semblent plutôt inviter l'aveugle à l'oisiveté ; qu'ils y trouveraient enfin dans les ateliers et dans les emplois un placement plus facile, et tout au moins de précieux

avantages pour l'acquisition de la matière première et l'encoulement de leurs produits.

Nous avons déjà écrit sur ce sujet dans le journal de Milan, "Corriere della Sera" du 27 septembre 1917, où nous proposons la construction, à Milan, d'une série de maisonnettes contigües, d'un seul étage chacune, à mettre à la disposition des soldats aveugles rééduqués, qui n'auraient pas trouvé l'ambiance favorable dans les villages où ils seraient retournés et qui désireraient s'établir, pour les motifs indiqués ci-dessus, dans quelque grande ville. Outre les avantages relatifs à l'exercice de leur métier, ils pourraient encore en retirer bien d'autres de cette installation. "Leur vie, écrivions-nous alors, serait moins triste, vivant en voisinage, ils pourraient se réunir dans leurs heures de liberté, alimenter leur vie intellectuelle par de bonnes lectures, participer comme citoyens à la vie politique, donner en somme à leur vigoureuse jeunesse cette plénitude de développement spirituel et matériel à laquelle elle a droit." Et pour subvenir à la difficulté du transfert quotidien des maisons aux établissements et aux bureaux situés dans les divers endroits, éventuellement éloignés d'une grande cité, je proposais l'acquisition d'une automobile spéciale qui servirait à transporter chaque matin les aveugles au lieu travail et à les reconduire à leur maison le soir.

Fonctions du Patronage relatives a la Collectivite des Aveugles reunis dans les Maisons de Travail.

L'œuvre du patronage se rattache surtout, d'ailleurs, au fonctionnement des maisons de travail expressément organisées pour les aveugles de guerre. Avoir créé pour eux ces maisons n'est qu'un premier effort qui engendre immédiatement la nécessité d'un devoir ultérieur d'assistance. Aussi grand que puisse être le capital recueilli pour la fondation des maisons et leur fonctionnement, il faut naturellement éviter de le dépenser trop vite : il est nécessaire pour cela de veiller à ce que le travail fourni par les aveugles réunis dans ces maisons ait une valeur économique qui ne soit pas inférieure ou, du moins, pas trop inférieure aux salaires qui devront leur être assignés dans une mesure correspondante aux besoins de leur subsistance. De tout ce que nous avons dit plus haut, l'on doit certainement déduire, en effet, que la déficience de la capacité productive des aveugles relativement à celle des autres ouvriers, déficience accrue par le manque de collaboration avec ceux qui voient, ne permettra pas, dans la plupart des cas, que les marchandises fabriqués par eux aient une valeur d'échange supérieure ou égale aux salaires qui devront leur être attribuées, plus le coût de la matière première et les frais courants nécessaires au fonctionnement des maisons de travail. Cela paraît d'autant plus évident, si l'on pense que ceux qui chercheront spécialement de l'occupation dans ces maisons sont ceux qui n'auront pas trouvé d'autre condition plus convenable, c'est-à-dire, presque toujours, les moins habiles, les moins intelligents et, peut être, les moins courageux. Du reste,

même les maisons de travail pour les désoccupés qui voient sont constamment passives et présentent même souvent des passivités vraiment impressionnantes.

C'est à la direction de maisons de travail qui seront instituées qu'il appartiendra de veiller au choix des travaux les plus adaptés à la capacité des aveugles, à ce que leurs produits trouvent l'écoulement le plus facile et le plus sûr, qu'ils ne soient point sujets à l'aléa de la mode ou trop exposés aux autres fluctuations du marché ; de diriger chacun des aveugles vers le travail auquel il sera particulièrement plus et d'organiser de la façon la meilleure et la plus productive leur collaboration. Mais, même dans le choix des travaux à exécuter dans les maisons, l'œuvre de la direction pourra utilement s'appuyer sur celle des patronages qui pourront lui donner des indications fournies par l'expérience qu'ils auront acquise dans leur œuvre d'assistance aux ouvriers aveugles autonomes, surtout à ceux qui travaillent à domicile. En outre, les patronages pourront en certains cas approvisionner les maisons de travail des matières premières qu'ils fournissent déjà aux autres ouvriers aveugles, comme l'on pourra éventuellement leur confier la vente des produits fabriqués dans les maisons elles-mêmes. Les patronages pourront aussi exercer ces mêmes fonctions pour les coopératives de travail entre aveugles, sauf certaines différences de formes et d'intensité déterminées par la nature diverse des deux institutions, comme nous l'avons déjà relevé plus haut. Surtout les patronages, qui devront avoir, par délégation des pouvoirs publiés eux-mêmes, la fonction de l'assistance aux aveugles rééduqués et qui seront conséquemment reconnus comme les tuteurs légitimes et naturels de tous les intérêts matériels et moraux à la défense desquels les aveugles ne veulent ou ne peuvent veiller par eux-mêmes, pourront s'occuper de stipuler, pour les maisons de travail ou pour les coopératives de travail entre aveugles, des contrats avec les établissements privés et surtout avec les institutions publiques qui s'engagent à acquérir d'une manière continue toute la quantité ou une partie fixée, de produits déterminée qui seront fabriqués dans ces maisons ou par les coopératives. L'Etat, par exemple, pourrait s'engager à acquérir toutes les brosses et balais, dont il est à présumer que le nombre ne serait pas excessif pour les besoins des services publiés existants dans une grande ville et dans les villages les plus voisins, et, quant aux brosses, pour le nettoyage des chevaux de l'armée. Si l'Etat ne pouvait les acquérir toutes, une partie pourrait être offerte à la commune de cette ville, et, à l'occurrence, à d'autres communes voisines. L'Etat pourrait aussi s'engager à acquérir des maisons de travail tout ou la majeure partie des filets dont il a besoin pour wagons de chemins de fer, et ainsi de suite.

Nous ne sommes certainement pas favorables aux formes de monopole et d'exclusivité concédées par l'Etat, qui vient à limiter ainsi sa liberté d'acquisition et le choix des produits les plus convenables par leur qualité et leur prix ; mais le cas qui se présente est si spécial, qu'il justifierait une situation de privilège. Il s'agit ici de personnes qui, pour la défense du sol de la patrie et de son

indépendance, ont sacrifié leur intégrité physique, modestes héros à qui nous devons tous la reconnaissance, envers qui la nation a contracté une obligation sacrée d'assistance que le versement d'une pension ne suffit pas à compenser ! Qui donc pourrait trouver injuste ou trop onéreux que l'Etat leur accorde une préférence dans la fourniture de certaines marchandises ? Qu'il leur concède, par exemple, une exclusivité, ou même, au cas où l'exclusivité ne semble pas opportune, nécessaire ni possible, car la quantité des produits fabriqués par les invalides de guerre ne serait pas suffisante aux besoins de l'Etat, qu'il établisse pour les produits par eux fabriqués un prix quelque peu supérieur à celui qu'il serait possible d'obtenir d'autres fournisseurs ? L'Etat ne doit être exigeant que sur la qualité, qui doit répondre aux nécessités de l'usage de manière que n'en souffre point le service auquel les marchandises doivent être employées ; mais une supériorité de prix ne semblera certainement illégitime ni inopportune.

Comme on le voit, les occasions et les formes dans lesquelles les patronages peuvent offrir leur assistance aux aveugles ré-éduqués sont infinies. Mais cette assistance leur sera d'autant plus utile qu'ils s'efforceront de le faire en sorte que leur intervention ne limite pas la liberté des aveugles, ne suffoque pas leur initiative, n'engourdisse pas leur activité.

Nous avons le devoir d'aider ces héros malheureux contre les obstacles que la vie présente à chacun, mais pour eux plus nombreux et plus graves ; mais nous n'accomplirons ce devoir comme il faut si, en leur apportant notre assistance, nous ne saurons respecter leur personnalité et le sentiment de leur indépendance, de leur dignité, de leur humanité.

Conclusions.

Pour toutes les considérations ci-dessus exposées considérant :

1. Qu'il convient de rendre autant que possible l'invalidé à sa précédente vie de travail, *force vive* dans la Société de travailleurs, renouvelé dans la confiance et dans la conscience d'être une énergie socialement utile et individuellement capable de faire respecter sa dignité personnelle de travailleur ;

2. Que l'invalidé aveugle, bien qu'étant incontestablement un individu diminué et incomplet, n'en soit pas moins pour cela un travailleur appréciable, du moment qu'il a révélé, dans l'exercice du travail manuel, des qualités précieuses, insoupçonnées avant la guerre, alors que l'éducation professionnelle des aveugles manquait des secours didactiques nécessaires pour mettre ces qualités dans leur pleine valeur et leur pleine efficacité ;

3. Qu'il serait conséquemment incompatible avec le véritable intérêt matériel, intellectuel et moral de l'aveugle rééduqué de le confiner, sous le prétexte de sa faiblesse, dans une sphère d'action étroite, où s'ajouterait à l'inconvénient de sa propre cécité, celle de tous ses compagnons de travail, et où la monotonie

d'une vie de travail sans luttes, serait comme une autre ombre étendue sur son âme, soustraite prématurément aux échos et aux débats du monde de ceux qui voient ;

4. Que, seule la préoccupation de l'embarras éventuel où l'aveugle de guerre arriverait à se trouver au cas où il voudrait associer son activité à celle des gens qui voient, et la supposition de la négligence et de l'abandon dont il serait bientôt victime, ne suffiront pas à justifier le renoncement à une expérience qu'une intense propagande vraiment humanitaire entre travailleurs et entrepreneurs " voyants " pourrait rendre possible avec le triomphe conséquent de la plus complète réintégration de l'aveugle de guerre dans la vie commune ;

5. Qu'enfin, s'il peut suffire à l'aveugle-né, habitué à vivre séparé en partie du monde qui l'entoure, la consolante distraction des travaux variés qui enrichissent le monde de sa pensée pauvre d'images, une telle distraction ne peut suffire également aux exigences spirituelles de celui qui peut voir encore avec les yeux des autres, car il a l'expérience de la lumière et de la beauté et un riche patrimoine d'images dans le cerveau que seul peut tenir vivant le contact avec ceux qui voient, tandis qu'il se dissiperait dans la convivence habituelle avec des aveugles seulement.

On énonce le vœu :

Que le travail individuel autonome de l'ouvrier aveugle soit favorisé, soit à domicile, soit dans les ateliers parmi ceux qui voient (moyennant l'application du principe de la division du travail), soit dans les emplois, comme le moyen le plus propre à susciter chez l'aveugle les énergies personnelles et à aiguïser en lui le sentiment de la responsabilité, à lui permettre de faire apprécier ses qualités de travailleur et de participer à la vie du monde qui l'entoure, encouragé à reprendre son ancienne activité.

DOTT. PROF. LAVINIA MONDOLFO,

Direttrice della Scuola di Rieducazione per Soldati ciechi
annessa all' Istituto dei Ciechi di Milano.

**Maison de Convalescence et de Travail pour les
Militaires aveugles. Florence, via S. Marta, n. 14.**

Annexe N. 1.

La distribution dans les divers ateliers et écoles des 146 militaires aveugles hospitalisés dans la maison jusqu'au 31 mars, 1918, peut se résumer comme il suit :

Travail de l'osier, 65 ; travail canne maïs, 66 ; charpenterie, 3 ; recouvrement des chaises ordinaires, 10 ; recouvrement des chaises en

canne d'Indes, 8 ; travail de nattes et corde, 7 ; cages pour huile, 15 ; filets de pêches, 5 ; reliure de livres, 3 ; balances, 3 ; objets en plumes, 5 ; couverture de dames-jeannes, 23 ; agriculture, 25 ; travail brosses et sparterie, 15 ; bonneterie, 7 ; massage, 6 ; lecture et écriture " Braille," 86 ; dactylographie, 65 ; musique : piano, 6 ; orgue, 2 ; autres instruments, 36.

Du jour de l'ouverture au 31 mars, 1918, la " Maison " a hospitalisé 146 militaires aveugles dont :

No. 59 furent congédiés après avoir accompli leur rééducation et No. 37 en sortirent pour les motifs suivants : No. 20 pour de graves motifs de famille ne purent achever leur rééducation ; No. 6 furent transférés dans d'autres instituts ; No. 4 furent éloignés pour des motifs d'indiscipline ; No. 1 parce que irréducable ; No. 6 durent retourner en traitement à l'hôpital.

De manière qu'au 31 mars, 1918, No. 50 soldats se trouvaient présents dans la " Maison."

Annexe N. 3.

Ecole de Reeducation de Naples.

Jusqu'au décembre, 1917, 23 militaires aveugles avaient été hospitalisés à l'Ecole de Rééducation de Naples, dont 10 donnés comme rééduqués et 13 en rééducation.

Résultats obtenus satisfaisants :

Tous les rééduqués travaillent, excepté un qui est riche, et tirent profit de leur travail.

Le patronat les suit, les aide en ce qui a rapport avec la matière première et les commandes.

Les enseignements consistent en travaux de vannerie pratiques et de luxe, de nattes pour fenêtres, de reliure de livres, de tapis de cocco, de nattes, de corbeilles et bandes de sparterie.

REPORT ON THE DEAF.

BY J. DUNDAS GRANT, M.D., F.R.C.S.; Major (ret.) late P.O. Rifles; President, Special Aural Board (under Ministry of Pensions).

Since the memorable meeting at Paris in the May of last year much blood has been spilt, much maiming and mutilation has taken place, and yet the end of this murderous war seems almost as far off as ever. The moral of this is that, however great our efforts have been to reconstruct and re-establish those sufferers who are about to be, or have actually been, discharged from the Navy and Army, these efforts will have to be continued with equal, and even with redoubled, energy for a very considerable time.

Our French Allies, owing to their throwing enormous bodies of already conscripted and trained forces into the field before we were able to do so, were in possession of much valuable experience in regard to the recruiting, training, maintaining and treating their men which we, with our "contemptible little army" of professional and voluntary soldiers, could study and apply with advantage to our own conditions. Similarly, with regard to the maimed and mutilated, we were able to get from them a good lead, though, as may be seen from Sir Alfred Keogh's admirable paper read before the Inter-Allies' Conference and published in the Reports, we had made not merely a good start, but a great advance in a relatively short space of time.

It may be admitted that we were rather behindhand with the deaf as compared with the blind, maimed and neurasthenic, but perhaps the reason is not far to seek. In spite of some sensational statements by writers in the Public Press, the numbers of the really deaf were comparatively few, and their helplessness in obtaining paid work was not very considerable. The more obvious claims of those otherwise afflicted in large numbers called for the first consideration. The earliest step in dealing with the deaf was taken privately in Edinburgh, where the Edinburgh Lip-Reading Association established a class on May, 1st, 1917, under the tuition of Miss M. E. B. Stormonth, of the Edinburgh School Board. A small number of men were with some difficulty collected from all parts of the United Kingdom, and were lodged or billeted through the generosity of the association. The teaching was excellent and the results most satisfactory, but, of course, the scope of the voluntary association's activity was necessarily a limited one, and, as Miss Stormonth said, State recognition was indispensable.

The matter was taken up most earnestly by Sir Alfred Keogh, the Director-General of Medical Service, and enquiries were set

on foot as to the extent of the needs of the deafened men and the best means of supplying them on the part of the authorities.

I had the honour of preparing for Sir Alfred Keogh the section dealing with the deaf in his Report to the Inter-Allies' Conference, and subsequently of visiting the French institutions in which the deafened soldiers and sailors received the necessary education in lip-reading.

Arrangements similar to those which I witnessed in France were proposed and approved, and are now in full force. I have been allowed to describe this work in considerable detail in the third number of the "Review" in your hands, under the title of "Recalled to Life," and I shall not, therefore, impose upon you a repetition of what is now ancient history. Suffice it to say, that the purely official part of the work is controlled and financed by the Treasury, through the Ministry of Pensions, while the absolutely necessary amenities which are indispensable to the successful working of a school of lip-reading for "free" adults is generously subsidised (apart from some private support) from a fund manipulated by the Office of Liaison between the War Office and the Ministry of Pensions through its chief, General Sir George Bullock, who has taken up the work begun by Sir Walter Lawrence.

The number of men so deafened by the incidents of military service as to be in need of training in lip-reading was found to be considerably less than had been supposed, and the number of those willing to undergo such training was very much less still, owing to the abnormal demand for labour and the readiness with which even the deafest men found lucrative employment. I shall revert to this point further on.

Meanwhile, every effort has been made by means of advertisements, circulars, letters and personal visits to bring before the sufferers the benefits of lip-reading, and to organise courses of instruction conducted by highly qualified teachers.

Although the number so deaf as to require lip-reading was not great, it was observed by the officers of the invaliding boards that there was a vast number who suffered from minor degrees of deafness and diseases of the ear attributable to or aggravated by military service. It was, therefore, felt that facilities should be afforded for them to receive the necessary treatment without interference with their daily occupation.

Experience has also shown that in the examination of men for assessment of the degree of disability produced by deafness or disease of the ear there were many cases of exceptional doubt or complexity such as to call for special investigation with more detail and deliberation than was possible before the invaliding board. It has been found desirable to provide the means for the carrying out of this more special examination by a board of expert aurists convened for the special purpose.

Again, before a man is started on a course of instruction in lip-reading it is considered necessary for him to be examined by experts with regard to his suitability for such instruction, or else for medical treatment, or, it may be, for both. Aural surgeons are properly associated with an expert in lip-reading instruction for the purposes of such an examination.

The Special Aural Board under the Ministry of Pensions.

To fulfil the purposes above detailed, the Minister of Pensions was pleased to appoint a Board consisting primarily of four aural surgeons (Arthur Cheate, F.R.C.S.; Hunter Tod, F.R.C.S.; Sydney Scott, F.R.C.S., and George Cathcart, M.D.), and a specialist in instruction in lip-reading (Mr. Sibley Haycock), with the writer as President. Their activities were in the first instance confined to London, but subsequently they were extended to the various areas into which the United Kingdom is divided for the purposes of pension distribution. These areas are each under a representative of the Ministry, and in each there have been appointed aurists and lip-reading specialists who are members of the Aural Board, but acting only in their own areas.

The following is a list of these aural surgeons, with the lip-reading specialists, appointed to the different "areas":—
ENGLAND:—*Northern Area*, James Don, M.D., with Mr. D. Baldie; *Yorkshire*, G. Wilkinson, F.R.C.S., and E. W. Bain, F.R.C.S., with Mr. G. W. Greenslade; *N.W. Area* and *Cheshire*, Sir William Milligan, M.D., and T. Guthrie, F.R.C.S., with Mr. W. Nelson; *E. Midlands*, F. W. Bennett, M.D., with Mr. A. J. Storey and Mr. W. Carey Roe; *W. Midlands*, Wm. Lamb, M.D., and C. G. Russ Wood, F.R.C.S., with Mr. J. Brown; *S. Midlands*, W. H. Bowen, F.R.C.S.; *East Anglia*, E. W. Everett, M.R.C.S., with Mr. O. H. Illingworth; *Home Counties, N.*, Aural Board, London; *Home Counties, S.*, A. J. Hutchison, M.B., with Mr. J. O. White and Mr. A. M. Sleight; *Southern Area, Central*, N. MacGillicuddy, M.R.C.S., W. Prior Purvis, M.D., and Arthur Roberts, F.R.C.S., Ed., with Mr. E. Townsend and Mr. Sibley Haycock; *South-Western Area*, P. Watson-Williams, M.D., R. A. Worthington, F.R.C.S., and C. E. Bean, F.R.C.S., Ed., with Miss M. Linton Robertson, Mr. P. Dodds, and Mr. Robison. **SCOTLAND**:—*S.E. Scotland*, A. Logan Turner, M.D., with Mr. J. S. Barker and Miss M. E. B. Stormonth; *S.W. Scotland*, Albert Gray, M.D., with Mr. W. H. Addison. **WALES**:—*N. Wales*, W. Permewan, F.R.C.S., with Mr. S. Coward; *S. Wales*, D. R. Paterson, M.D., with Miss Williams.

The headquarters of the Board is established in a commodious house allotted to it by the Crown, and situated at No. 28, Park Crescent, London, W. The business is mainly transacted by a secretary, Captain Ingram, who in the present instance happens to have been a teacher of deaf-mutes in Canada before he joined the Army.

For the purposes of putting lip-reading instruction within the reach of all who have been discharged from the Army and Navy on account of deafness or ear-disease, the secretary receives lists of such men from the invaliding authorities, and sorts them out according to the areas in which they are domiciled. He then forwards these lists to the representatives of the Ministry in their respective areas, so that the men may be called up before the official aurists and lip-reading specialists for examination as to their eligibility for training in lip-reading, for treatment of their ears, or both. To the large number who are in the London area circulars and letters are sent direct from the headquarters, and many are visited by the secretary or other helpers, who explain to them the advantages of lip-reading.

The actual instruction is carried on in the class-rooms at the headquarters, and classes are held there morning and afternoon for those who are prepared to have whole-time training, and in the evening for those who wish to follow their occupations during the day. This has been recognised as a branch of national education, and the Board of Education has generously co-operated with the Ministry of Pensions by providing the teaching staff under the guidance of one of its medical officers, Dr. Alfred Eichholz. The organisation and technical direction of this work has been entrusted to Mr. Sibley Haycock, Principal of the National Association for the Oral Teaching of the Deaf, Fitzroy Square, from the teaching staff of which institution the actual teachers have been supplied.

As regards the duration of the course, opinions differ, and on the whole our French colleagues consider less time necessary than we do. The Germans, on the other hand, ask for at least five or six months. We look upon three months as being an ordinary full course, but in a good many cases a second course is necessary, especially for those who have been deafened through epidemic cerebro-spinal meningitis. The probability is that the nature of the language and pronunciation of the different nationalities are answerable for these differences. In the pronunciation of French the lips and face come very much into play, whereas in German there is a very extensive guttural element. There is no fault to find with the English language, but the reproach of our French friends that we "swallow our words" is not without foundation, and our habitual mumbling makes us difficult to understand by lip-reading.

I may again here recall a personal experience at the *Institution des Sourds Muets* in Paris, where, when in conversation with some deaf French officers who, in addition to their own language, knew English and German, I found that they could understand my German better than my English. I quote this not as a proof, but as an illustration of what I have above stated.

From the nature of things, then, we might expect our results to be somewhat less brilliant than those obtained in France, and for that matter even in Germany, but we have every reason to be pleased with what our teachers of lip-reading have effected.

As a type of the results obtained in France, we have before us those reported from the Institution at *La Persagotière* at Nantes.

In 73 cases they are noted as :—

Perfect in	...	...	...	...	...	37
Very good in	...	...	...	...	...	10
Good in	...	...	...	...	...	11
Fairly good in	...	...	...	...	...	5
Mediocre in	...	...	...	...	...	5
Not re-educable in	...	...	...	...	...	2

Here we have the fine logical sub-division for which our French friends are so noted, but in our rough, practical way Dr. Eichholz has made a simpler set of categories which are worth considering in detail. They are as follows :—

- (1) *Entirely satisfactory*.—These include cases whose lip-reading attainments place them practically on the level of hearing people; that is to say, they lip-read a stranger as though they were practically in full possession of ordinary hearing power.
- (2) *Satisfactory*.—This category includes cases possessing a useful acquirement of lip-reading, and who respond *either* (a) after not more than a single occasional repetition, *or* (b) after they have repeated the question as lip-read in order to make certain that they have understood rightly.
- (3) *Fair*.—These cases are able to respond to simple sentences only, and require questions to be repeated from three to five times before they apprehend rightly.
- (4) *Unsatisfactory*.—These cases respond merely to single words after frequent repetition. They are apt to suffer also from neuro-muscular changes, resulting in flattened or rough voice.

Out of 16 who had completed the full-time day course the results were as follows :—

Entirely satisfactory	...	...	...	...	5
Satisfactory	...	...	...	...	1
Fair	...	...	...	...	4
Unsatisfactory	...	...	...	...	2
Unclassified	...	...	...	...	4

20 students still in attendance may be classified as :—

Entirely satisfactory	...	...	...	...	3
Satisfactory	...	...	...	...	4
Fair	...	...	...	...	11
Unsatisfactory	...	...	...	...	2

It is probable that a considerable proportion of these will improve the categories before the present course is completed, provided they attend with due regularity.

Of the 35 who have attended the evening classes there are :—

Entirely satisfactory	...	...	...	...	19
Satisfactory	...	...	...	...	5
Fairly satisfactory	...	...	...	...	2
Unsatisfactory	...	...	...	...	0
Unable to be classified owing to short attendances	...	...	...	...	9

Other classes have been formed under the London County Council and in Manchester, Brighton and Exeter, and others are in course of formation at Reading, Bristol, Bradford and Plymouth.

It will be obvious to all that the learning of lip-reading is most fatiguing and a great strain on the power of attention and mental concentration. While men are still in the Army and under military discipline when undergoing instruction, as in France, it is perhaps easy to get them to tolerate the necessary control, but our men have been already discharged and are in the enjoyment of their newly recovered liberty. It is necessary, therefore, to make their schooling agreeable to them, as there is a strong temptation for them to exercise their free agency in the way of rejecting further instruction in order to take up the lucrative occupations which, as we have already said, are now open even to the very deaf.

With this view, the headquarters has been invested with many of the characters of a "club," and in the intervals of cessation from teaching the men enjoy the luxuries of a handsome recreation room, where they can smoke, read and play games, including billiards on a small table, as also of the billiard room, in which there is a full-sized table fitted for pool, pyramids and other varieties of billiards. There is also a small library from which books can be borrowed for home-reading.

An interesting experiment has been made with the cinematograph, through the kindness and generosity of Messrs. Pathé. Mr. Haycock was filmed while uttering a string of phrases compiled by him as illustrating ordinary conversation of a simple character, and the students in the class were invited to repeat them aloud as they "lip-read" on the screen. The result was extremely good, and the experiment proved most enlivening and stimulating. At the same entertainment Mr. Lalor, the accomplished American comedian, now in London, who is a master of clear articulation and facial expression, stood in front of the audience, with a strong light thrown upon his face, while he narrated a number of snappy little historiettes. The laughter on the part of the deaf students showed at the same time their powers of lip-reading and the appreciation of good-natured wit. It is intended to have this gentleman's acceptable performance reproduced on the film, and to solicit similar contributions to the experiment from other exponents of the art of the raconteur.

Of equal importance is the provision of facilities for meals, and a good mid-day dinner is provided at rather under cost price, as

also a tea and hot soup in the evening. The catering and waiting is in the hands of a body of voluntary lady-helpers organised and directed by Mrs. Dundas Grant.

The care devoted to the maintenance of the comfort and contentment of the men is believed to have been of great help to the teachers in making their eminently successful work all the more easy and effective.

The results in the case of those who have accepted training must be considered extremely good, but the numbers are, to say the least, surprisingly small. Has the machinery been installed to no purpose? A thousand times "No." It has already been pointed out that at the present time there is quite an abnormal demand for the labour, even of the very deaf, owing to the drain on the supply of labourers for military purposes. When, however, peace is again restored and demobilisation takes place, there will be a rush for work, and the hearing men will unintentionally but inevitably oust the deaf ones from their occupations. Only those who have neutralised their disability by learning lip-reading are likely to retain their hold, and for them the work we have done will prove a great blessing, while our doors will still be open to those who, under the stress of necessity, are then wise enough to ask for our help and teaching. They will come in large enough numbers to justify the elaboration of our machinery, and reward us for our labour.

A singular cause of disinclination to learn lip-reading has recently been disclosed, namely, an erroneous idea which has been circulated to the effect that a man's pension is diminished if his earning capacity is increased owing to his acquisition of lip-reading. It can only be said that this is entirely incorrect, and its circulation is calculated to do enormous injury to those who may be deterred from acquiring this profitable accomplishment. No man's pension is diminished because he is taught a trade or supplied with an artificial arm or leg, and it cannot be too strongly impressed upon all concerned that *no man's pension is diminished because he has learnt lip-reading*. In point of fact, the learning of lip-reading is considered an evidence of the genuineness of the man's deafness and of his being, therefore, entitled to his pension.

For the treatment of men discharged on account of deafness or diseases of the ear, but who are able to follow their occupations, special clinics have been organised under the direction of the President of the Special Aural Board. In London there are three, situated respectively in the far west at Hammersmith, in the far east at Stratford-by-Bow and in the centre at the Central London Throat and Ear Hospital, King's Cross. Each of these is open once a week at six o'clock in the evening, so that the men can attend them after their daily work.

For those who require operative or other in-patient treatment, accommodation is afforded at certain general hospitals, for which payment is made by the Ministry of Pensions, under special conditions.

The work of the Board has some peculiar difficulties which must be obvious to those experts who realise that it has to deal with cases which are passed on to it on account of exceptional complexity or doubt. It involves questions of diagnosis of the utmost delicacy, and assessments of degrees of disability on which the future of the injured man and the interests of the community alike depend.

A few words in regard to these difficulties and the methods of overcoming them may not be out of place.

The diagnosis of organic deafness, apart from the statements of the patient in response to the ordinary clinical tests, presents difficulties of its own which call for all the care, ingenuity and experience a skilled expert can bring to bear on it.

The chief undeniable causes are injuries directly involving the internal ear or diseases such as cerebro-spinal meningitis and mumps. The history of such cases, and still more particularly the direction of wounds and the position of fractures of the cranial bones, as indicated by radiograms, give positive evidence of great value. The respective positions of the wounds, of entrance and exit, may indicate the passage of the missile through or near one or both internal ears. Radiography sometimes reveals a fracture implicating the internal ear, even in cases in which the candidate has been suspected of concocting a history to bolster up a simulated deafness.

The history of genuine traumatic rupture of the tympanic membrane from explosion is often most typical. I shall not here detail its characteristics.

As a rule, deafness coming on after cerebro-spinal meningitis is due to extension of the infection to the internal ears, and a history of this disease may be generally accepted as conclusive evidence of the existence of genuine deafness and of its nature. We know, however, that in many cases of epidemic cerebro-spinal meningitis deafness does not ensue. We have, indeed, had a case with such a history and with deafness, but the methodical examination of the ear showed a middle ear catarrh coincidental with the meningitis. This disease is, nevertheless, one of the main causes of the most extreme deafness.

The condition of the equilibrial portion of the labyrinth, as indicated by the positive or negative reaction to cold or heat helps us materially, as though the cochlear portion is often damaged without the equilibrial being affected, it is very rare indeed for the equilibrial to be damaged without the cochlea suffering at the same time. Absence of the induced nystagmus would indicate that the deafness is due to damage to the cochlea, the presence of this reflex would not exclude it.

Functional deafness has received much study since the beginning of the war, and is now understood better than formerly. The reflexes, excited by sounds (especially if unexpected), were formerly taken to indicate that the alleged deafness was not

genuine but simulated; but now we know better, and we realise that the occurrence of these reflexes may indicate merely that the deafness is of functional and not of organic origin. It need hardly be said that this knowledge increases the difficulty in detecting simulation of deafness.

In regard to functional deafness, there are many questions of great interest which have been much discussed, and need not, therefore, be considered in an assembly to whom they are very familiar. I should like, however, to refer to a paper by Major Hurst which has not been very widely circulated, in which he seems to localise the site of the break in functional continuity of the nerve-strands in this form of deafness.

The *eligibility of men for learning lip-reading* is best dealt with by the aurist and lip-reading specialist in conjunction. It is most important at the outset to eliminate those cases in which the deafness is of functional origin, and for this the aurist is answerable, so that the subject may be handed over to the neurologist or psychiatrist instead of being merged into a lip-reading class with the sufferers from deafness of organic origin. When, however, there is a suspicion that the deafness is simulated, the question may sometimes be cleared up in the lip-reading class, when the simulator's pretence to have learned lip-reading may be checked by further observation under conditions on which we need not here dilate. It is practically impossible for anyone with really good hearing to acquire skill in lip-reading, so strong is the tendency to follow the line of least resistance. Such acquisition may be accepted as an indication that the deafness is genuine and not simulated, though it may be only functional and not of organic origin.

Among the evidences of suitability for lip-reading we must first recognise deafness of a considerable degree; there is no doubt that the very deaf, other things being equal, learn lip-reading better than those in whom there is a considerable remnant of hearing, although it must be admitted that a small remnant is no disadvantage. As a rough-and-ready rule, the degree of deafness should be such that ordinary conversation cannot be heard further than one foot, or loud conversation certainly not further than three. I consider one of the most valuable criteria to be the spontaneous acquisition of lip-reading to a greater or less extent, as it indicates, first, a high degree of deafness; and, second, such a capacity as to promise considerable success.

It is also necessary that there should be a reasonable amount of intelligence and nerve-power. As regards intelligence, this must not be taken to mean a high degree of education, because it is found that some individuals of comparatively poor education acquire lip-reading, within the limits of the vocabulary appropriate to their station, more rapidly than others with much higher educational training. A calm common-sense power of grasping in a synthetic mode what the speaker means to convey is more useful than a critical anxiety to analyse the component sounds before accepting their significance as a whole proposition.

The calm common-sense to which we have referred is scarcely to be looked for in those who are still suffering from the nervous weakness which the strain of war produces in certain temperaments, and it is often necessary to postpone instruction in lip-reading for otherwise eligible subjects until they recover from their coincidental neurasthenic troubles.

There is still another consideration, and indeed the primary one, namely, whether their deafness is likely to improve under treatment. Our first duty, as Sir Alfred Keogh emphatically insisted, is to cure them if by any means it is possible. Happily, the resources at our disposal in our own special clinics and elsewhere have in many cases produced the most desirable results, even in the face of difficulties which the initiated can easily divine.

On the whole, this part of the work has not presented any very great difficulty.

The most responsible function of the Aural Board is the re-inspection of those cases of applicants for pension, which, in the opinion of the aural surgeons attached to the Invaliding Boards, present characters of unusual doubt or complexity, as well as cases in which the claimants appeal against the previous assessment, and are referred to the Board for further consideration.

As regards the *assessment of the degree of disability*, we are faced with special difficulties. Presumably we have in the first instance to gauge the degree to which the man is disabled in regard to his normal earning capacity. Logically, we should have to collect statistics of a large number of deafened men and find out the amount of their earnings. Next, to do the same with an equal number of normal men of similar rank or station. Needless to say, we have no such material at our disposal, and we have to work by a somewhat arbitrary scale. The unit is total disablement; lesser degrees are estimated in percentages, in reality, in tenths. Our Warrant counts total deafness of both ears as 70 per cent. of total disablement, and taking this as our basis, we are left to work out the percentages for lesser degrees according to the best of our judgment without any hard-and-fast rule. Uniformity of assessment by different boards can, therefore, scarcely be expected, but on the whole a very reasonable approximation is attained, as is shown by the many assessments and re-surveys which have passed through our hands.

To help towards uniformity and to facilitate assessment, we have endeavoured, in the light of these reports and of our own observations, to draw up a scale founded primarily on the degree of the deafness as such. I offer this scale provisionally for your consideration :—

	Per cent.
(1) Total deafness both ears	70
(2) Total one, nearly total other (shout close to ear)	60
(3) Extreme both (shout from 1 to 2 ft. off on both sides)	50
(4) Total one, moderate other (loud voice 9 ft. off)	40

	Per cent.
(5) Extreme one, moderate other	30
(6) Total one, normal other	20
(7) Moderate both or either	under 20
	(for gratuity)
(8) Incapacitating vertigo	50-60

It will be seen that we make special allowance for cases labelled somewhat loosely as "incapacitating" vertigo. Taken *au pied de la lettre*, the allowance will seem by no means excessive, and indeed too meagre. Each case has to be taken on its merits, in the light of the frequency, severity and genuineness of the attacks. Such cases would generally be recommended for in-patient treatment when circumstances would permit of careful observation as well as treatment. It has also to be kept in mind that in most cases the vertigo has a tendency to subside under operative or other treatment or spontaneously. Concomitant signs and symptoms have also to be taken into consideration.

The scheme makes no allowance for suppuration as such, as not necessarily diminishing the earning capacity apart from the loss of hearing-power, but every encouragement to undergo treatment is afforded and every facility provided.

Another question is how to assess in case of pre-existing disease of the ear. This depends on the other question as to whether the disease was attributable to or aggravated by Military Service or not. Examination of the ear often reveals that there had been previous disease, as shown by cicatricial changes or perforations, and sometimes the man acknowledges having formerly been the subject of dulness of hearing, attacks of earache, running or fetor from the ear. More often, however, he does not, either because, like many in civil life, he has completely forgotten the circumstances, or for some other reason known to himself. We consider the evidence and judge as exactly as we can, but we have to assume that if the man was passed for service, and retained under training and discipline, his hearing was good enough for Military Service. If, then, we find such a degree of deafness as is incompatible with this, we have to give the invalid the benefit of the doubt, and find the disability attributable to or, at all events, greatly aggravated by Military Service in the absence of any other obvious cause. Our report as to the degree of disability is reviewed by the Award Officers in the light of our reports as to the causation and the other circumstances of the case.

I think it will be agreed that the desire of the Ministry is, in the first place, to be generous to the damaged soldier or sailor; and in the second, to consider the depth of the public purse. I venture to believe that in our limited sphere we are aiding in the arrival at just decisions.

It must be realised that the present period is one of building up against the time of greater need when the war is ended, as the change in the labour market will throw out of employment the unfortunate deafened men who now find work at good wages in spite of their defective hearing. The machinery is now well-established and ready for those who are prepared to take advantage of it.

OFFICIAL REPORT ON THE AFTER-CARE OF THE DISABLED IN THE WAR (ULTRA- DISABLED).

PROF. ETTORE LEVI (Florence), Member of the Executive Committee of the National Commission for the Protection and Assistance of Invalids of War.

The term ultra-disabled is applied to a special category of the disabled (*Grands Blessés*) whose wounds, whether single or compound (blindness, mutilated and crippled limbs, paralysis of the central nervous system), have caused such grave and complex disability as must be reckoned, in current actuarial phrase, at more than one hundred per cent.

- Such disabled are not only incapable of re-adaptation to any form of useful work, but must rely for their very existence upon the service of others.

It is not an easy task to classify the different categories into which the ultra-disabled may be further sub-divided, since there is an infinite variety in the monstrous and complex mutilations of war. For brevity and clearness I shall here divide them into two main categories. First, those disabled by complex mutilation (blind, with double amputation of upper limbs); those patients with double amputation of the upper limbs, either with vision or with one normal eye; those amputated in three or four limbs; and those crippled in the main joints with corresponding functional lesions. (With such cases, as far as I am aware, the Inter-Allied Conference at Paris, 1917, did not occupy itself.)

The second category, unhappily much more numerous, is composed of those patients disabled by lesions of the central nervous system (tetraplegic, paraplegic, hemiplegic). Suffering from chronic illness, they require and have a right to special medical attendance and skilful moral supervision. Taking into consideration the inadvisability of sending these patients a great distance from their homes, I believe it would be unwise to create for them at the present time special institutions, but we ought rather to concentrate them in special hospitals or in special sections of the general hospitals existing in each district of the country. I refer, of course, in this regard to Italy. (With this category the Conference of Paris has occupied itself, and I concur in their conclusions.) Having for the most part both senses and intelligence unimpaired, and in many cases possessing full control of their upper limbs, these patients are naturally capable of almost unlimited improvement, and of adaptation to useful and remunerative occupation. This is not the case with those ultra-disabled of the first category. For

these the creation of special institutions would seem to be essential, for the following reasons :—

1. The blind or mutilated patient adapts himself readily to an environment created to meet his special requirements, and is less painfully conscious of his own incapacity than when he is associated with normal or semi-normal companions.
2. The presence of the gravely disabled is necessarily depressing to the less disabled men.
3. The material and moral help which the ultra-disabled will continually require is of so special and exacting a character that it will hardly be supplied by the personnel either of the hospital or the training school. Such patients would inevitably constitute the minority in any general institution, and without a neglect of the majority could not receive the special care which is due to them.
4. The space required for the ultra-disabled in hospitals or schools of re-education would prevent such institutions from the accomplishment of the work for which they are intended. The ultra-disabled is neither ill nor capable of re-education, in the true sense of the word.
5. The ultra-disabled cannot receive in his own home, except when possessing ample financial means, the material and moral comforts which are supplied to him by a special institution.

Present Development of Assistance in Italy, and Programme of Future Organization.

In the course of repeated visits made since the beginning of the war to the various centres of concentration of the disabled in Italy, I have come to the conclusion that, for the reasons above-mentioned, it is essential to provide, without loss of time, for the first of the two categories of ultra-disabled, leaving to happier times the solution of the problems relating to the second and more numerous class of those suffering from permanent lesions of the central nervous system.

In December, 1916,* I traced in broad lines the programme of a permanent home for the ultra-disabled. The Italian Red Cross, acting in collaboration with Prof. Enrico Burci, Special Inspector, representative of the Minister of War, undertook, as an initial experiment, the execution of such a plan. The concentration of ultra-disabled coming directly from the first recep-

* Levi, Ettore. Of the Present and Future Treatment of our soldiers discharged for total incapacity for any form of Work. "Bollettino della Federazione Nazionale dei Comitati di Assistenza ai Mutilati, Storpi, e Ciechi." Anno II. Number 1, page 22.

tion hospitals of Mantua and Bari, was organised by the Florence section of the Italian Red Cross, in a villa-hospital given for the purpose. This first period of experimental effort was so successful that I have felt it wise to undertake a second time the consideration of the same subject.*

The Italian Parliament, by the law adopted in March, 1917, entrusted the protection of, and assistance to, disabled soldiers to the organisation, described by me in an official report to the Inter-Allied Conference, known as the National Commission for the Protection and Assistance of Disabled Soldiers and Sailors. Having had the honour to be elected a member of the Executive Committee of the National Commission, it has been my privilege to set before my colleagues various considerations upon this subject.

The Council of the National Commission, whose purpose it is to provide for the ultra-disabled the most complete and generous assistance, is now establishing in Florence a model institution in their behalf, and intends also to organise two similar institutions, one in the north and another in the south of Italy, where patients may be received at not too great a distance from their own homes.

The present report is largely the programme which the present writer will shortly present to the Council of the National Commission, for the organisation of the first Home in Florence. It is based upon the results of the experiments already carried out there, and upon an extensive experience of the concentration homes for disabled in Italy.

Before entering into a discussion of the details of the organisation of an ideal institution, I shall point out briefly some of the essential characteristics of its inmates.

Mentality of the Ultra-Disabled.

The ultra-disabled, by reason of their grave physical disability, generally undergo considerable change of character. They, as a rule, become extraordinarily sensitive; easily irritable, susceptible upon the slightest cause to profound depression and unrestrained exaltation; morbidly jealous of one another, and subject alternatively to happiness and despair. They present, therefore, the essential characteristics of a morbid infantile mentality, resulting in sudden and paradoxical reactions. These characteristics are relatively accentuated when the subject is of mediocre intelligence and culture, and correspondingly vary according to his general organic condition.

But happily the same characteristics render the patients susceptible to every good influence. Rarely, if ever, does suggestive persuasion fail. Patients who had been reluctant to enter the

* New notes on the grave and serious problems of the Ultra-Invalids of War. *Ibidem.* Anno II. Number 10, October, 1917.

institution readily adapt themselves to their new environment. Even those whose sojourn has begun in a spirit of utter insubordination yield in a surprisingly short time to the influence of their companions who have already learned to appreciate the spirit of the house, and are transformed both in conduct and mental attitude. They attach themselves with grateful affection to their attendants, and are, if well treated, incredibly serene, allowing themselves to be calmed and distracted with remarkable docility in moments—not infrequent—of melancholy or excitement. The sense of isolation from social life is especially painful to them, and they are correspondingly happy under a *régime* which alternates wisely between diversion and occupation.

The susceptibility of the patients to every form of influence, whether good or bad, makes it imperative that the rare cases of definite and irremediable insubordination should be eliminated, since the reaction upon their more amenable companions might otherwise inevitably follow.

Recruiting of Patients.

The utmost consideration must be given to the means by which the patients are to be induced to enter the institutions established for them. Experience has shown us one fact of capital importance, namely, the extreme difficulty with which the disabled can be persuaded to leave the environment where they have been received during the initial stages of their disability. This tendency on the part of the unhappy sufferers to attach themselves, with touching devotion, to those who have first ministered to them is entirely comprehensible. They are like the shipwrecked, who throw themselves blindly upon the first means of succour. In the first agony of realising their position they are conscious only of their infinite misery ; they know nothing of the consolation and opportunity held out to them in the refuge prepared for them ; they dread lest the future may hold for them not solace, but only fresh pain.

It is in view of such conditions that we in Italy have followed the plan, already described, of sending the disabled, as soon as their wounds allow, from Mantua and Bari (first concentration hospitals), to the Hospital-Home at Florence. This concentration of all the ultra-disabled offers the double advantage of creating for them, with the least delay, the environment in which they are assured the maximum of comfort, and in which at the same time they may be persuaded of the advantages offered them of passing into the permanent home now in course of preparation.

This plan is, however, only partially realised. There are many ultra-disabled already distributed throughout the territorial hospitals of Italy ; others who have returned to their own homes ; others still who refuse with desperate determination to be removed from the environment where they are now established. In certain cases, where, with an unfortunate lack of tact, patients

have been forced against their will to submit to change, incidents of actual rebellion have occurred which must, at all costs, be avoided for the future.

It follows, therefore, that wherever such conditions exist (and I believe them to be common to every belligerent country) there should be appointed representatives who, with true missionary spirit, should search out and identify such ultra-disabled, whether in the hospitals, throughout the country, or in their own homes. These missionaries—for they are truly bearers of good tidings—will seek to convince the patients of the opportunity offered for their future by the State; to persuade them that they are under no obligation either to enter or to remain in such institutions, but that it would be wise for them to consent to an experimental sojourn, which, in a successfully administered institution, is likely to have but a salutary result.

Special care should be taken for the journey of the patients. They should be accompanied by an adequate number of attendants, in charge of a responsible officer, travelling with every comfort in a reserved compartment secluded from the curiosity of the public. If scrupulous attention be not paid to such details (humble, but essential!) the natural sensibility of the patients will be wounded, and the ends of the desired propaganda thus defeated.

If the war is to continue for a long period, an ideal solution of this problem might be found by the establishment of a surgical hospital, preferably in the same city in which the first home-hospital is situated. To this surgical hospital every ultra-disabled man, without exception, might be sent, so that from the very first stages of his incapacity he may be surrounded by a maximum of comfort, and also be definitely at rest, without the necessity of that change of environment so painful to him, and fraught in a good many cases with such disastrous results. During the medical-surgical cure the patient should be so instructed as to look forward to his final reception into the special institution. Such instruction could be—and should be—carried out by the managing staff of the permanent institution, who will thus have an opportunity of making themselves both known and loved by their future pupils.

Material and Moral Treatment.

The first aim in the treatment of the ultra-disabled must always be to render his future life materially tolerable. But, by its very conditions, such life would tend to degenerate into the routine of a purely animal existence. The moral aspect of the problem is, therefore, no less vital. The foundation of a material and moral well-being for these unfortunate sufferers—as, indeed, for every normal being—should be an ordered life, a sane and wise distribution of time in accordance with their physical and psychical capacities. There must be developed in them the qualities of heart and mind, so that by every means—by praise

and rewards, by instruction, and, above all, by example, they could progress towards greater knowledge and a quickened moral instinct.

The aim of the administration of such an institution should be to establish a discipline so perfect that the patients are conscious of no restrictive prohibitions, and that they may be content with a daily routine which wisely employs every hour of their day. Otherwise, from long hours of tedium or of idleness will result discontent, degenerating into the formation of vicious habits and disorderly conduct. Both work and play ought naturally to be adapted to individual capacity, according to degree of disablement and intellectual development. But for practical purposes the patients should be associated in groups based upon analogous physical conditions. Those patients who are blind, with double amputation of upper limbs, will naturally be brought together for study, diversion, and instruction at stated hours daily. Another class naturally associated are those with double amputation of the upper limbs, with vision; those amputated in three or four limbs; and those with double amputation, deaf or blind; or those amputated and also deaf and blind.

The fundamental task then must be to secure for those who will for ever be dependent upon the service of others some small measure of independence in the recurring functions of physical life. Every effort must, accordingly, be made to enable each patient to eat, drink, wash and dress himself, and to attend to his bodily needs without the assistance of others. He should be provided with such individual prosthetic apparatus as may best be suited to his disabilities. The household furniture and articles of daily life and work—tables, chairs, desks, beds, small working machines, toilet articles, writing materials, table service, &c.,—must be exactly and correspondingly adapted to the prosthetic apparatus used by the inmates of the institute. The present writer is not competent to describe the practical details of such prosthesis and mechanical artifices, but he is convinced that every institution should secure for this purpose the permanent services of an intelligent orthopedic mechanic, who will be able, often with the advice of the ex-patients themselves, to perfect and adapt such artifices to greater practical efficiency.

The present market of prosthesis offers such facilities that every patient with double amputation of arm or fore-arm should be put into such a condition as to be enabled to feed himself—all the more readily if such amputation be below the elbow. The same artifice can also serve the purpose of washing, at least the face, by means of individual sponges (attachable to the stump as glove or mitten) of rag or absorbent paper, renewable after use. The cleansing so important and painful of the genital organs and of the anal region should be carried out by means of special adaptations, either as those above-mentioned, or with the use of *bidé* with continuous current with small ascending douche, or by means of movable metallic arms attached to the side of the water closet with paper sponges (individual) renewable after use.

Although the majority of patients will require assistance at such times, it may be limited to supervision and direction, without the humiliating necessity of actual manual help. The Institute should be furnished with baths and douches constructed for the special requirements of the patients with supports and seats. All such appliances should be adaptable, though with greater difficulty, to the bi-amputated blind. Indeed, for a zealous and intelligent head of an Institute, who will know how to inspire his charges with courage and goodwill, nothing should be impossible. The patients will themselves ask for nothing better than to become increasingly independent of the service of others, and such independence should form an essential part of their moral education.

A fundamental modification must be made in the clothing adopted, substituting for the complicated type in general use a special pattern sufficiently loose and ample to be put on with ease; in winter warm enough to reduce the underclothing to one garment in the form of combinations. The openings of outer garments should be large and adapted for the easy satisfaction of bodily needs; buttons, lacings and hooks should be abolished and substituted by automatic fasteners larger than those in common use which the patients may manipulate independently or with the minimum of assistance. The same characteristics should apply to boots and shoes. Ingenious appliances of this character have been the subject of most successful research by Prof. Putti, Director of the Orthopedic Clinic of Bologna (Istituto Rizzoli), which it is to be hoped will be submitted to the Conference. It may wisely be considered whether, in view of the just and natural pride and patriotism of the patients, they ought not to be allowed to continue to wear the uniform in which they have served their country and made their supreme sacrifice. If the use of the uniform is adopted, it might be adapted in accordance with the special requirements of the patients, as mentioned above, retaining in all cases the stars and military distinctions of war and becoming also characteristic of the institution itself.

For those with double amputations of the lower limbs, special low beds should be constructed, obviating the danger of a fall and easy of access. Those who are unable to walk should have at their disposal small carriages, to be propelled by the hands if these are not amputated.

At least twice daily the patients should be taken into the country, where they may walk without danger and with a certain measure of liberty. For bad weather covered ways should be provided. For each group of patients, games, exercises and special occupations should be improvised according to their capacity. It seems to the present writer that various games at bowls or ball, to be played by groups or by individuals against a wall, could be made feasible, using balls and bowls alike larger and lighter than those in common use. Bowls and balls containing bells might be adapted for the blind, and could be propelled by the feet, trunk, and even heads of those with double

amputations of the upper limbs. Precautions will naturally be needed to avoid accident.

Similarly, for indoor exercise, gymnastic apparatus of the Zander type may be used, especially those modelled on the movements of riding, bicycling, &c., which call into action the muscles of the entire trunk, as well as apparatus designed for the lower limbs or adaptable for the stumps of the upper limbs. Patients, even those gravely disabled, take great pleasure in dancing, and should be encouraged to improvise games and exercises according to their own ideas.

Advantage will wisely be taken of the natural love of music, especially prevalent among the Latin races. Phonographs and gramophones give much pleasure, and, in particular, automatic piano and organ players (controllable by the feet) by which those amputated in the upper limbs are able to make music without assistance. Among the blind, or those with vision, we have known in Italy several patients who have taken up with enthusiasm and success, the study of a violin made possible for them by the attachment of the bow to the stump of the forearm. Both stringed and wind instruments (not requiring the fingers) might similarly be adapted. With singing, both solo and in chorus, we have obtained excellent results. Great vigilance must be exercised in order to prevent patients from street-singing, as a means of gaining the alms and commiseration of the public.

Groups of patients and, in particular, the blind, should be assembled at stated hours daily, for reading aloud. Books should be chosen with special care, avoiding novels of a sentimental or passionate character, giving preference to books of travel, humour, adventure, legends, folk-lore, &c. The learning and recitation of good poetry is also suggested. Part of such reading should be instructive, so that the patients may become conscious of a steady advance towards a strengthened moral and intellectual development.

Patients with double amputation of upper limbs, with vision, could read and study with little help (using pincers to be attached to the chin for turning and holding the pages). They also greatly enjoy and profit by the cinematograph, with which every institution should be provided, both for diversion and instruction.

In the institution established at Florence, many patients, blind and with partial double amputation of upper limbs, with only one remaining finger, have already learned with enthusiasm and facility both reading and writing in Braille by means of a special pointer attached by means of a ring. The typewriter has also proved a source of pleasure, both as diversion and occupation, even to patients with a single or part of a remaining finger. Although lacking the actual proof of personal experience, I am convinced that, provided the stump of hand or forearm be conical or pointed, with a bony and resistant substratum and with well-preserved skin, even those patients who have lost all their fingers

may accomplish the study of Braille, using the stump in the place of fingers.

It is unnecessary to emphasise the value to every patient of being adapted to the most elementary work, with the possibility of earning a wage, however small. The institute should establish laboratories or workshops where work may be carried out by the patients in collaboration. Elementary machines of various types (printing presses, etc.) may so be constructed as to be propelled by the feet of the amputated blind, while the more advanced processes could be supervised and completed by patients with vision or those still retaining a part of the forearm. The achievement of work by means of collaboration ensures a degree of moral satisfaction to the patients, who, thus following the natural law of an humbler order of life, become truly *symbiotic* in the realisation of a common existence.

The encouragement and example of such trials and triumphs of will and persistence can hardly be over-estimated in its effect upon the moral advancement of the patient's mentality, or in regard to the contagious influence exercised upon the patience and perseverance of their less active companions. Each should be given an opportunity to use and develop every remaining faculty. I repeat that, for a director of intelligence and enthusiasm, nothing should be impossible in the matter of advancement of the intellectual or physical life in his pupils. The patient who enters such an institution, worthily administered, need not abandon hope that he shall one day leave it so transformed as to be able to take up again a life of relative independence and self-reliance. Those patients possessed of moral energy and less painfully incapacitated for normal life may, with time and skill and devotion, become restored to such an extent that they need no longer be classed in the sad category of the ultra-disabled. They should, therefore, be continually encouraged by the stimulus of generous rewards and the fellowship of sympathetic emulation.

Administration and Equipment of Institution.

The selection of the site for such an institution is of fundamental importance for its administration and ultimate success. The choice of location between town and country may necessarily be pre-determined by the facilities offered in cities or regions where institutions are to be erected; but, *a priori*, it will be well to set forth their relative advantages and disadvantages.

The selection of a site in town would offer the following advantages :—

- (1) Facility of contact with, and control by, those responsible for the supervision and direction of the Institute.
- (2) Facilities for the medical treatment, amusement, and instruction of patients offered by towns, where they may easily be transported to special clinics, theatres,

cinematographs, and to the various schools which they may attend to advantage.

- (3) Distraction for patients who are not blind and will find diversion in more frequented centres.

A country site, on the other hand, presents the following advantages :—

- (1) Better hygienic conditions and more favourable and normal environment for patients who may live almost continually in the open air, walking unaccompanied for comparatively long periods in the grounds of the institution (in the case of the blind upon paths indicated by carpets and low side cords) or, accompanied, in the surrounding country without arousing public curiosity and commiseration.
- (2) Facility for nature study and agricultural pursuits, which are familiar and congenial to patients taken for the most part from the peasant class.
- (3) The disadvantages of distance from supervisors or visiting teachers may be obviated if the institute be supplied with its own carriage or motor. These may offer also an additional source of distraction for the patients and eliminate the necessity of the use of public conveyances. A carriage or motor should, for the same reasons, be at the disposal of every institution, whether in town or country.

The sum of advantages are, I believe, in favour of a site in the country, provided only that it be at not too great a distance from centres where the above-mentioned town advantages are obtainable. We must also reckon with the fact that, at the conclusion of the war, it will not be possible to count upon the continued services of those volunteers who during the period of critical need have displayed such admirable self-sacrifice. Nor in any case may such service be adequately systematised and controlled. It is, therefore, essential that the staff of the Institution shall be permanent, salaried, and, if possible, resident in the building itself or in its immediate vicinity.

The Director of the Institute might be chosen with obvious advantage from among officers disabled in war. As such he would exert over the patients a special moral ascendancy. He should, however, be neither blind nor too gravely hampered in his physical independence to exercise the activity of so exacting a post.

The ideal solution of a complex problem would be found if such a disabled officer were also a physician ; and failing a suitable personality among the disabled of war the military authorities might wisely be asked to indicate a medical officer from the active or retired list. But it is not imperative that the Director should be either a physician or an officer : it is highly imperative that he should be of irreproachable moral character, of serene energy, gifted with those special virtues of heart and mind which may

alone fit him for the difficult mission he has undertaken. If a director be chosen from civil life he may with advantage be either a physician or a teacher with special vocation for teaching. Since the institution should be of an undenominational character, it is not advisable to appoint a clergyman. Generally speaking, the appointment of a woman is also out of the question, since in exceptional circumstances only will a woman possess the force of authority essential for the control both of patients and staff who must necessarily live under a rigid discipline. The question of the relation of a patient with the other sex would also be likely to present difficulties to a directress. But, on the other hand, the administration of the institute will have absolute need of the co-operation of women. The sad inmates of such a home should feel themselves neither in a hospital nor an asylum, but members of a family for whose unfortunate children the self-forgetful and intuitive imagination of a woman may create the illusion of a life still relatively active, still holding something of opportunity and self-development. For a woman of such character the post of vice-directress may well be reserved; and to women may also be given the supervision of the kitchen and linen-room, as also minor posts in the administration.

The majority of the staff should be male, preferably composed of men of the Army Medical Corps, commanded by a non-commissioned officer, who may be chosen from among the disabled of war, but must be possessed of sufficient moral and physical energy. The patients will require constant care, both in relation to the elementary functions of daily life as also because whenever and for whatever reason they may leave the institution they must be accompanied (and well accompanied!). The number of orderlies must therefore be calculated upon a basis of from one to two or one to three patients. Our experience has shown us that the employment of persons of low intelligence, relative goodwill and indifferent morals may have most unfortunate results. Success may be looked for only if every member of the staff, from the director to the last orderly, from the teacher to the visitor, be chosen with the most judicious discrimination.

The vice-directress (or director) will require several women assistants, chosen with scrupulous care, neither unduly young nor of obvious physical attractions, for reasons readily understood. The personal care required by the greater number of the patients makes it advisable that the nurses should not be women, except for special offices, such as the cleansing of the orbital cavity or of the artificial eyes.

The staff should be divided into two categories: First, those who supervise the intellectual and moral activities of the patients, as well as their recreations and physical culture; and second, those who are occupied with their material well-being. Both should, however, be endowed with the special qualifications essential to the successful performance of their tasks.

Since the majority of the patients will be blind, requiring special moral and material treatment, a teacher or tutor, either

blind or with normal sight, but thoroughly experienced in Braille and in methods of instruction for the blind, should be a permanent member of the staff.

For the successful administration of the institution and for the material and moral wellbeing of his patients, the director should be frankly convinced of the dominant importance of the sexual question.

The majority of the patients are young and healthful, subject also to special sexual excitability by reason of a life of enforced repose, a generous diet, and of injury to the normal centres of sensorial satisfaction (sight, touch, sound). The diet must accordingly be studied, as indicated later on; the patients must be physically fatigued by exercise in the open air or gymnastic apparatus; their reading should be supervised with vigilance; their relations with visitors, with members of their families and women members of the staff, should be rigorously controlled. The utmost care should be taken that they do not abandon themselves to masturbation, either individual or associate, to prevent which they should remain in bed only when necessary with moderate coverings. The orderlies who accompany patients upon their outings must be of absolute moral trustworthiness.

The possibility that patients may be persuaded into marriage with persons impelled by mercenary motives must be taken into consideration. Each case must be judged individually, and when undesirable the objections should be clearly stated. If the patient remains unconvinced by the advice of the institutional administration in Italy, the control of the National Commission may be requested. This body will have the right to place under legal control those ultra-disabled who are incapable of safeguarding their own future.

Marriage with persons of indubitable morality and self-sacrifice may in individual cases be sanctioned. Such will, however, be rare, especially among the more gravely disabled.

In an institution open to every form of faith the principle of absolute religious tolerance must prevail. It is, therefore, undesirable that a dominating religious element should be represented either in the administration or staff. It is, however, just and natural that men so deeply afflicted should crave the comfort of religion. The service of a chaplain, with the special qualities essential for such a post, should be a member of the staff, and a chapel should be fitted up within the institution. To patients of every faith there should be given the possibility of following their individual religious inclinations, but the necessity of sending patients in groups to churches where they may excite the attention of the public should be avoided whenever possible.

If the staff of the institution has not the services of a resident physician (as may happen in those intended exclusively for the disabled not suffering from illness) the collaboration of a competent medical man in the vicinity should be secured. He should visit the institution daily for the supervision of general hygienic

conditions, and so as to attend the patients during passing maladies. An infirmary, for the isolation of contagious diseases or serious cases, should be equipped. This will obviate the necessity of the removal of patients to general hospitals, where they cannot receive the special care required.

A room should be set aside for ordinary medical purposes, the treatment of accidental injuries, the cleansing of the orbital cavities of the blind, and for the dressings required exceptionally by the stumps of the wounded.

A small orthopædic workshop, which may receive from the large official workshops of the State the material necessary to be adapted to single cases, should be attached to the institute. The services of an orthopædic mechanic, both competent and devoted, will be essential. His skill and ingenuity must provide for the prothetic appliances necessary for every patient, in accordance with the studies made by the great scientific institutions. The director of the workshop should also study and modify, by his daily experience, the objects of common use—knives and forks, toilet articles, writing materials, machines, &c.—to the service of his patients and pupils.

The diet of the patients must be studied with special care, bearing in mind two factors—the development of a physical well-being without the stimulation of sexual excitability. It should consist principally of farinaceous foods—(rice, semolina, maize, macaroni), of green vegetables, beans, potatoes, fats, &c. Meat should be given once a day in small quantities; fish more frequently. Food should not be highly spiced; little wine or coffee, and no spirits, should be given; sweets and preserves generously.

A diet adapted to their individual tastes and local customs is a source of innocent pleasure to the patients which should be taken into just consideration. Indulgence and ingenuity should seek to gratify every legitimate preference, and the kitchen should be considered a laboratory of happiness. For patients condemned to an absolutely sedentary life, a diet composed largely of vegetables, and even the daily massage of the abdomen, will be found necessary to the regular functions of the intestinal tract.

Patients of the institute should be at liberty to leave it to re-enter their homes within certain obviously necessary limitations. The staff of the institution will hardly be sufficient to permit patients to be often accompanied, as they must be accompanied, upon journeys to and from home. Two to four leaves, of ten to fifteen days, should be allowed during the year, as a minimum, with special leave in cases of necessity for family or personal reasons.

Carefully devised rules of discipline will be necessary to eliminate insubordination or disobedience. These may be: deprivation of exercise, of games or studies; curtailment of leave or of wages; isolation in a room which shall serve the purpose of imprisonment without its character or name. As a severe

measure, temporary banishment from the institute may be adopted or, in the last resource, permanent expulsion.

If it is proposed to expel a patient permanently from the institution, it will be necessary, in Italy, to report the case to the National Commission, who will have the sole right to sanction such a measure. Delegates of the Commission will supervise the well-being and conduct of the patient in his own home, and will safeguard him by every legal and material means.

The same responsibility will be assumed by the National Commission towards those disabled men who refuse definitely to enter a special institution and choose to remain either in their own households, or as pensionnaires. The charge of all such patients, who by their helplessness are exposed to every form of exploitation, will be taken over by the National Commission.

The necessary funds for the support of the institutes will be provided in Italy by the National Commission. The proportion to be contributed by the patients to the institute will be determined by the State. For the disabled in their own homes, who are in need or have slender means, a supplementary pension, in addition to that until now assigned, will be necessary, in order that they may support those persons upon whose care they are dependent. The present law will necessarily be modified in this respect.

The State, or those organisations to whom the State has entrusted the supervision of the relief of the disabled in war, must reckon without hesitation with the fact that such institutions as we have described will of necessity be extremely costly, both in initial installation and in upkeep. But no sacrifice, whether moral or material, will seem too great to those who are responsible for the welfare and happiness of these, our most unhappy brothers. It must, however, be borne in mind that in the interest both of successful administration and of economy the size of such institutions should be wisely considered. It seems to the present writer that the number of patients should average from fifty to one hundred, since, on the one hand, the initial equipment and installation for a smaller number would involve too great an expense; upon the other, a larger institution would inevitably be too complex for successful management.

Let us therefore Unite our forces on behalf of the Saddest Victims of the War.

What I have thus far set forth is the expression of a limited experience. Our work would have been obviously simpler and more sure of success had we been acquainted with the analogous efforts made by other nations towards a like end. But we are, unfortunately, wholly ignorant of what has been already accomplished in the same field, either by Allies or enemies; while, from the point of view of civilisation and of humanity, our Governments should, without loss of time, cull all the knowledge they can from the experience of others. And I would therefore call

upon the newly-organised *Revue Interalliée* to meet this need, the gravest of our problems. A special rubric, designed for the study of the ultra-disabled, which should share the experience of every fortunate initiative and undertaking for their well-being, might yield a rich harvest. For it must be remembered that in such problems no features are insignificant, all are precious. The details of organisation, of study, of games, of physical comfort, of clothing, of special prothesis, may be of inestimable value to alleviate the sufferings of our cruelly stricken brothers.

In the consideration of such questions there should be neither friends nor enemies, and for this reason I welcome the assurance that the President of the International Red Cross of Geneva has accepted a proposal made by me* for the internationalisation of all work undertaken by every nation on behalf of the disabled in war, thus placing them *au-dessus de la mêlée*. Three proposals were advanced: (1) An international congress on behalf of the disabled; (2) an international exhibition, to be held by the International Red Cross at Geneva, of prothesis, &c.; (3) an international journal to be published by the International Red Cross. At the present time only the second proposal has been accepted, but the Red Cross is sending, accordingly, to every belligerent and neutral country a programme-circular relative to such an exhibition. We are as yet ignorant of the answers which have been received by the Red Cross. We trust, however, that they may have been favourable, and that the time is not far distant when, in a civilised Europe, the hearts and brains of every country may be united in a common effort to alleviate the miseries of the present strife.

* Levi, Ettore. "Let us raise the disabled of every country 'au-dessus de la mêlée!'" "Bollettino della Federazione Nazionale dei Comitati di assistenza ai Militari ciechi, storpi, e mutilati." Anno II. Number 9, September, 1917.

SECTION 3, B.

Surgical Treatment.

ON KINEMATIC AMPUTATION.

DOTT. GINO PIERI, Army Surgeon, Verona.

The experience I have acquired up to the present in the application of the principles of kinematic amputation to war surgery can be summarised as follows :—

I.

When a limb has been mutilated by a bullet or an explosion it is advisable to perform immediately a kinematic amputation (primary kinematisation), because the tissues offer little power of resistance, and are very liable to infection or neurosis.

II.

After an upper limb has been severed by violence the stumps must be got into condition by removing only the injured or infected tissues. The skin should not be removed, and the bone ought to be sectioned at the normal level of the flesh or a little higher.

In operations on the forearm two lateral incisions have to be made (radial and ulnar), so as to prepare the two motors, flexor and extensor. The resulting stumps may be treated successfully with elastic traction, so as to avoid retraction and muscular atrophy, and so as to increase the quantity of skin available, which is necessary to cover the motors. The preparatory or hypokinematic amputation will prepare the best conditions for a second operation aiming at the *secondary kinematisation* of the stump.

III.

When stumps are obtained by the ordinary methods of amputation, it is possible to utilise the muscular element by operating a second time (tertiary kinematisation). The technique of this operation varies according to the position of the stump.

(a) *Upper limb*.—Kinematisation of the stump of the upper limb aims at obtaining the greatest possible motor energy of the stump. When the latter is the result of the disarticulation of the shoulder, it is possible to restore and utilise some of the muscles inserted in the humerus. In one instance I was able, with the tendon of the great pectoral muscle, to build a motor capable of lifting 5 kilos to the height of four centimetres.

When disarticulating the scapular-humeral it is found advisable, if local conditions are favourable, to build two motors :

the first one with the pectoral muscle, and the other with the deltoid. In the case of short stumps resulting from the amputation of the arm (upper third), the disarticulation of the humeral segment remaining allows the surgeon to utilise loopwise the muscles inserted in the humerus. This method has given good results in the one case in which I have applied it.

In the stumps of arms (middle and lower third) it is possible to build two motors, the one flexor and the other extensory, in the shape of a double loop. I operated in such a case with good immediate results, but the bridge was demolished by the surgeons of the base hospitals.

If the stump of the forearm is very short, it is advisable to build a motor with the biceps. In a case recently operated by myself I formed a loop by suturing the biceptal tendon, which had been cut at the point of its aponeurotic expansion, and covering it with a fragment of the skin removed from the anterior fascies of the elbow. When the stump is a little longer, but not extending beyond the half of the forearm, it is possible to build a very strong single motor with a flexe-extensor loop. In one case of this kind I cut off the distal portion of the bone of the forearm, and lined the resulting tunnel with two fragments of the skin. The results were satisfactory.

When the stump is longer than the half forearm it is possible to build two motors in the shape of loops, utilising the flexor and extensor muscular fascies. This method also has good results in one case in which I applied it.

So far I have made no attempt at tertiary kinematisation of the hand.

(b) *Lower limb*.—Kinematisation of the stump of the lower limb aims primarily at obtaining the greatest supporting power for the stump, so as to enable same better to bear the weight of the body. This is achieved by covering the bony extremity of the stump with a flap of flesh, capable of active movement, being endowed with movement in alternative directions.

In the case of stumps resulting from very high amputation (para-articular) of the leg, I have in two instances obtained good results by the application of the Della Vedova method : *i.e.*, the osteoplastic condilic amputation of the femur, the building of a flexo-extensor loop, by suturing the rotular tendons to the flexor tendons.

In the case of stumps resulting from amputation of the leg at the lower third, I have in two instances obtained satisfactory results by a method of kinematic amputation with the formation of a terminal flexo-extensory loop, and the building of a flexor motor for prothesis formed of a mass comprising the tendon of Achilles.

In the case of man who had lost his foot (third degree of frost-bite), in which only the astragalus and the heel remained, partly

raw and gangrenous, after disarticulating and segmenting almost completely the malleous, I wrapped the stump in a flap containing the extensor tendons, which I sutured to the flexor tendons. By this means I obtained a flexo-extensory loop which played on the articular surface, and which was possessed of considerable moving power.

It would prove most valuable if in the disarticulation of the hip-joint use could be made of the pelvic-femoral muscles to build motors which would allow of the active movement of the artificial limbs. In a case of disarticulation consequent on a serious septic wound which did not benefit by re-section, I preserved the gluteus muscles up to their insertion, and also the psoas tendon, together with their osseous insertion. With these I am in hopes of being able to build at a later stage two motors, one extensor and the other flexor.

CYNEMATIC AMPUTATIONS.

PROF. V. PUTTI, Director of the Rizzoli Institute, Bologna, Italy.

Synopsis.

The author having noted that the historical and theoretical side of cynematisation has been discussed by Dr. Vanghetti, confines himself to considering the method from the point of view of its practical application, resulting from the experience gained by him from numerous stumps from amputation of upper and lower limbs.

Having indicated his limits and explained the groundwork and the results of cynematisation without loss of blood, the author proceeds to deal with the mode of operating in cynematisation and examines the methods tried by him and others up to now. He then studies plastic motors, both their morphology and their functions, pointing out the types which, in practice, have corresponded best.

Then going on to consider results, he asserts that a decisive opinion on the value of the method cannot at this moment be given, sufficient experience not yet having been gained. Moreover, there is still lacking that intimate collaboration between orthopædy and mechanical skill which, on the one hand, will bring operating surgery to perfection, and, on the other, will improve the manufacture of artificial limbs.

A NEW PROCESS FOR CYNEPLASTICS.

BY PROF. AUGUSTO PELLEGRINI, Territorial Hospital, Italian Red Cross, Chiari, Italy.

1st Movement.—Two transversal incisions are made, parallel to each other, and distant 3 to 4 centimetres, that penetrate the skin, the sub-cutaneous pores and the superficial aponeurosis: the two incisions are prolonged obliquely in a proximal direction for 2 to 3 centimetres, thus dilimitating a strip of skin that forms a bridge.

2nd Movement.—This strip of skin is rolled back over a thin slip of gauze, and is held by 2 or 3 stitches.

3rd Movement.—The lips of the operatory wound are pulled apart, the anatomical elements that are to serve for the formation of the plastic motor are found; the motor itself is made by bringing a part of these elements in front of the cutaneous bridge and suturing them to those that have been left behind.

4th Movement.—Cutaneous plastic by means of glides so as to cover up the plastic motor; hemming of the orifices of the cutaneous tunnel that passes through the motor.

By means of this process the writer has obtained satisfactory results, both clinical and experimental.

I will describe briefly a system of cyneplastics with which I have experimented on animals, to start with, and later on, on human beings, with satisfactory results.

This process is particularly adaptable to the formation of extraterminal plastic motors. I habitually prefer these for the cynematising of amputated stumps.

For this operation local anæsthetics can be used, or the patient can be put under the influence of a general narcotic. Local anæsthesia might have the advantage of causing the patient to contract his muscles during the operation, thus allowing a better view of the anatomical parts affected. Instead, general anæsthesia would be preferable for the more extended plastics, and for sensitive or pusillanimous subjects.

Having decided on the exact plan of operation, chosen the type of motor required and the variety of plastic motor to be constructed, the technical side of the operation becomes both easy and simple; but it must be done with the greatest care, down to the minutest detail.

1st Movement.—Two direct transversal incisions must be made across the length of the limb: they must be parallel and about 3 to 4 centimetres distant from

each other. They must penetrate the skin, the subcutaneous pores and the superficial aponeurosis. The length of the two incisions will vary according to the parts that are being operated upon and the width of the plastic motor which must be covered over.

The two incisions must then be continued at both extremities, for $1\frac{1}{2}$ to 3 centimetres, in a *proximal* direction, and still remaining parallel with each other, or else slightly diverging, so that the two peduncles are wider.

2nd Movement.—The skin, delimited by these incisions, must then be detached, together with the superficial aponeurosis, and folded back on itself over a thin strip of gauze. By this means a cylinder of cuticle is formed which crosses the field of the operation like a bridge: 2 or 3 sutural stitches are taken with catgut so as to maintain this bridge of skin in position, with the result that the line of suture is proximal on account of the incisions being deviated at each end. The tendency of the cuticle is to roll over in a proximal direction.

3rd Movement.—The edges of the cut are pulled apart by hooks, so as to place the field of operation in full view; the anatomical elements, that are to serve for the construction of the motor, are found and noted. Having picked up the tendons or muscles that are to be used as the foundation of the motor, they are placed in evidence, and the motor itself is prepared. By bringing part of the motor elements in front of the bridge of skin, and suturing them to those behind, care must be taken that the sutures do not come in contact with said bridge, but are placed either nearer or further away. Should the motor be formed in a tendinous part, it would be well to leave the tendons in their sheath. The tendinous suture, or tendinous grafting, should be done with great accuracy, in order to be able to proceed quickly with the mobilisation of the motor.

4th Movement.—The motor having been formed, the cutaneous plastic is proceeded with by means of glides, so as to cover the motor up exactly, and the orifices of the tunnel passing through the motor itself must be hemmed. A plastic of this kind succeeds easily, on account of the shape given to the incisions: the skin is displaced in a backward direction in such a way as to cause the line of suture not to touch the line of the tunnel, but to be slightly detached.

The cutaneous suture may be done with stitches of very fine silk, or else partly with clasps and partly with silken stitches.

It would be well not to have the stitches too close together and to avoid drainage. If a few clasps are applied, it is well to take them off as soon as possible—say after two or three days.

Dry and abundant medication is indicated, so as to keep the stump warm. The bandaging must be very low : it will soon be replaced by a special stocking for stumps, that allows greater freedom of circulation and movement.

The course of healing is normal, and the complete cicatrisation is likely to take place within ten or twelve days. At the end of about fifteen days an active and passive mobilisation of the motor may be begun.

The process is subject to variations, either with regard to its technical formation of the plastic motor or to the treatment of the *skin that is to cover* the motor itself. I believe that this process may be used, not only for the formation of extra-terminal motors, but also in cases of cyneplastic amputations and re-amputations.

The advantages of the process thus described are innumerable.

The field of operation is fairly large, not only on account of the prolongation of the incisions, which allows for the pulling apart of the edges, but also because the skin that is rolled up on itself leaves a part of the field of operation uncovered. Should it become necessary to enlarge the field of operations, it will be sufficient to prolong one or both the incisions without having to make any others.

The cutaneous covering-up of the motor is obtained completely and quickly, and much more safely than with the Von Wreden and Sauerbruch processes, because the skin of the tunnel retains more vitality, remaining attached at both ends and with a large base ; whilst the edges used by Von Wreden and Sauerbruch are detached for their entire length and have only one peduncle.

The process upheld by Sauerbruch demands a greater quantity of skin, because of the edge having but one peduncle, and the detachment being more extensive, the retraction is greater, and partial necrosis may set in at the extremity of the edge corresponding with the hem of the tunnel's orifice, where it would be most desirable that healing should occur rapidly.

In both the orifices or mouths of the tunnel, according to my process, the cicatrix occupies only a part of the orifice itself, whilst in Sauerbruch's process we have a complete circular cicatrix, which causes the tunnel to be less distendable and the skin to ulcerate more easily.

The skin of the tunnel has a tendency to roll spontaneously and to remain rolled upwards, and for this reason the cicatrix of the skin of the tunnel is turned in a forward direction ; that is to say, on the side where no pressure is brought to bear on the prosthesis from the inorganic attachment of the motor. Given its position, this cicatrix does not prevent the inroad of the motor,

and finds itself on a different level with the superficial cutaneous cicatrix, which is more distant. It is also better to see that the sutural stitches needed for the construction of the motor do not come in contact with the cutaneous suture.

The plastic process is completed in a single sitting, and this constitutes an advantage over the systems that demand two sittings (Von Wreden and Sauerbruch). The operation is simple and easy, and all the movements are made in open sight, and not blindly, as is the case in the long canalisations of muscular motors according to the technics preferred by Sauerbruch.

In applying the process recommended by Sauerbruch, it is often not easy to cover up the field of operation that has remained uncovered without having to resort to further incisions, or graftings, or an excessive stretching of the skin; whilst by using the process I have set forth the shape of the incision allows for the gliding of the skin in a backward direction; hence the easy success of the plastic, with the certainty of its taking hold.

As an illustration of my theory, I will here give a clinical case on which I practised the above-described process :—

Emilo de Meo, private in the 217th Infantry, had his left hand blown away on a level with the wrist through the accidental explosion of a hand grenade.

He was sent down to me directly from the front by order of the Director of Health of the 1st Army Corps, so that the cynematising of the stump should be seen to.

I contented myself with cleaning and treating the wound, which was lacerated and contused, without proceeding to regularisation. I medicated with Dankin's liquid. The suppuration having ceased, elastic tractions were applied in order to accelerate the cicatrisation of the wound and to allow for the free articulations of the wrist. The wound being completely cicatrised, the cynematising was proceeded with.

Plan of Operation.—Besides the wrist, the little finger remained, but it was rigid and set in a defective position of adduction, as may be seen by the photograph. The articulation of the wrist was pretty good.

In deciding on the plan of operation with regard to the ultimate formation of the plastic motors, special account must be taken of the tendons and muscles, which, on being severed, have lost their power of movement, and the healthiest amongst these must be chosen. In this case it would be illogical to utilise the flexor and extensor muscles of the wrist that have retained their powers of utility.

I intended making only one flexuous motor, and I decided to utilise the tendons of the superficial flexor muscle of the fingers, together with those of the deep flexor muscles, gathering them together so that they would form a loop.

In order to have greater freedom for the operation, and also to have a larger quantity of skin at my disposal, I consider it best to make only one motor, reserving the faculty of making others after recovery, should they prove to be needed.

Operation 12, III., 1918.—Preventive hæmostasis with elastic noose. The upper part of the wrist is brought to view and maintained extended.

1st Movement.—I practise two transversal incisions, parallel to each other, in the flexuous region of the forearm. The first of these incisions is in line with the middle transversal fold of the wrist, and the second 3 centimetres forward. At the extremities of the two incisions I continue, on each side, with an oblique cut in a downward and forward direction, about 2 to 3 centimetres in length. These incisions penetrate the skin, the sub-cutaneous pores and the superficial aponeurosis.

2nd Movement.—The skin, delimited by said incisions, is partly detached and rolled over a strip of gauze : it is held in this position by 3 sutural stitches made with catgut.

3rd Movement.—I enlarge with the aid of hooks the operative cut, and, probing for the tendons of the superficial flexor muscle of the fingers, I bring them out. I then, as far back as possible, detach the four tendons, which recede, and I draw them out, together with their sheath, towards me, causing them to pass under the bridge of the skin, and bringing them up front of it. I then suture them carefully to the tendons of the deep flexor muscle of the fingers with 8 to 10 stitches of very fine silk.

4th Movement.—Having thus formed a flexuous motor with loop, I take away the enlargement hooks and proceed to cover up the field of operation completely with cutaneous plastic by means of glides. The forward edge of the skin is stretched to recover the cut where it is held in place by 2 stitches in silk and 2 clasps ; the orifices of the tunnel are carefully hemmed.

Dry and abundant medication without drainage. The wrist is set in a cast, so as to avoid, during the first days, the stretching of the tendinous and cutaneous sutures.

Regular Course of Healing.—On the third day I remove the two clasps ; on the seventh day I take away the silken stitches ; on the tenth day the cicatrization is completed, and the warm baths and active and passive movements are begun ; on the fifteenth day I subject the motor gradually to the weight it will have to carry.

LE TRAITEMENT PRECOCE DES AMPUTES DU MEMBRE SUPERIEUR.

By Dr. MARTIN.

Le traitement des amputés comporte deux phases bien distinctives : une phase chirurgicale, et une phase orthopédique. La phase chirurgicale comprend l'opération proprement dite d'amputation et les suites opératoires immédiates. La phase orthopédique est celle du traitement orthopédique et de l'appareillage.

Jusqu'à ce jour, l'opération seule a été envisagée par les traités classiques. L'expérience de la guerre a montré d'ailleurs que pas mal de notions établies à ce sujet doivent être modifiées. Ni le traitement consécutif à l'amputation, ni le traitement orthopédique, n'ont été sérieusement étudiés par les auteurs. De cette partie du traitement, cependant, dépend pour une bonne part la valeur du résultat final.

Depuis longtemps notre attention a été attirée sur ce point. Nous avons pu observer fréquemment des amputés du membre supérieur ou du membre inférieur porteurs d'un moignon cicatrisé et guéri chirurgicalement, mais enraidis dans ses articulations, manquant de force et de puissance musculaire. Le résultat était généralement d'autant plus défavorable que le traitement chirurgical avait duré plus longtemps (souvent à cause de l'infection), ou que le blessé guéri avait été abandonné à lui-même. C'est pourquoi, à l'Ambulance océan, nous nous sommes efforcés avec la collaboration des chirurgiens, d'instituer dès le début le traitement complet des amputés.

Nous n'envisagerons pas dans ce rapport, les notions qui règlent l'intervention chirurgicale au cours de l'opération elle-même.

Les suites opératoires intéressent la plaie et le moignon. On peut dire, d'une façon générale, qu'il est toujours indiqué de hâter la cicatrisation de la plaie d'amputation, soit par la suture primitive, soit par la suture secondaire précoce. Le chirurgien doit mettre tout en œuvre pour faire la prophylaxie de l'infection et pour réduire celle-ci quand elle est établie. Nous estimons, quant à nous, que toute plaie d'amputation du membre supérieur peut être guérie dans les trente jours. Ce délai est suffisant, dans la plupart des cas, pour amputer, aseptiser, réfectionner et suturer un moignon. Le plus court est le meilleur : nous avons pu, dans certains cas, avec le concours de chirurgiens dévoués et éclairés, réduire cette période à huit jours.

Le traitement du moignon lui-même, pendant la période des suites opératoires, est, à tort, selon nous, généralement négligé. Or ce traitement est de la plus haute importance et mériterait de retenir davantage l'attention du chirurgien.

La valeur d'un moignon est déterminée par la longueur et de ce dernier par sa mobilité active et passive. La longueur du moignon est fixée par l'opération; sa mobilité dépend du traitement post-opératoire.

L'atrophie musculaire et les raideurs articulaires sont les éléments pathologiques contre lesquels il est nécessaire de lutter; on les évite par la mobilisation précoce et par le massage des muscles du membre amputé.

A l'Ambulance de l'océan, à la Panne, le traitement est appliqué ainsi que l'indique la note ci-jointe :

NOTE SUR LE TRAITEMENT IMMÉDIAT DES AMPUTÉS.

Prière aux chirurgiens de l'établissement :

1°. De faire un effort pour réaliser la cicatrisation rapide des amputés, soit (a) par la suture primitive, soit (b) par la suture secondaire précoce.

Il faudrait intensifier le traitement de la plaie en vue de la stérilisation et suturer le plus tôt possible.

2°. D'instituer au lit même, dès le 2° ou le 3° jour, après l'opération, le traitement du moignon en faisant de la mobilisation manuelle journalière au lit, et en instituant un traitement par le massage léger, du segment supérieur au segment amputé. Ex : masser la cuisse chez un amputé de jambe; les muscles pelvi-trochantériens chez un amputé de cuisse; le bras chez les amputés d'avant-bras; les muscles thoraco-brachiaux chez un amputé de bras.

3°. Dans le cas d'amputation secondaire ne pas perdre de vue la possibilité de l'amputation pendant le traitement conservateur; donc, faire subir aux membres susceptibles d'être amputés, le même traitement qu'aux membres amputés (ceci dans la mesure du possible).

4°. De signaler immédiatement au service de prothèse la présence d'amputés susceptibles d'être traités par la prothèse provisoire.

Le traitement orthopédique proprement dit tend vers le même but que le traitement immédiat.

On peut dire d'une façon générale que cette partie du traitement était inexistante avant la guerre. La thérapeutique se limitait à quelques manœuvres, qui, la plupart, manquaient leur but. On faisait la compression du moignon au moyen de bandes élastiques de Velpeau dans le but de hâter le travail d'atrophie. En fait, on contrariait ce dernier en entravant la circulation sanguine de retour c.-à-d. la nutrition des tissus et la travail de résorption qui accompagne nécessairement toute atrophie. Cette manœuvre aboutissait surtout à favoriser l'établissement des raideurs articulaires et de l'atrophie musculaire. Les bandes de Velpeau, en gênant les mouvements, encourageaient le blessé à s'immobiliser; or, l'immobilisation prolongée nuit considérable-

ment aux amputés des membres. Nous avons depuis plusieurs années renoncé à ce mode de traitement plus nuisible qu'utile.

Le massage du moignon est fort conseillé à ce moment encore. Nous estimons, quant à nous, qu'il constitue une manœuvre inutile quand il s'adresse au moignon lui-même, qui doit faire son atrophie. Par contre, il est de toute première utilité, lorsqu'il est appliqué aux muscles qui commandent le moignon. Il sera d'autant plus efficace qu'on l'appliquera plus précocement. On peut en dire autant de la mobilisation manuelle.

La mobilisation mécanique, c.-à-d. la mécanothérapie des moignons, est à notre avis, inutile et mauvaise :

Inutile : parce qu'elle s'adresse à des moignons faits, que l'on peut traiter par des méthodes plus simples, plus rationnelles, plus efficaces.

Mauvaise : parce qu'elle est brutale et toujours réalisée d'une manière défectueuse, dans la méconnaissance des axes articulaires et squelettiques.

L'électrothérapie ne s'adresse qu'à des moignons anormaux atteints de névrite ou de névrôme.

Les lotions sont des soins utiles de propreté.

L'élément le plus nuisible aux amputés du membre supérieur est l'immobilisation du membre amputé dans une écharpe ou dans le vêtement. Il n'est d'ailleurs que la conséquence d'une habitude consacrée ; le bras de parade aboutit parfois au même résultat. On ne saurait trop s'élever contre de semblables pratiques.

Le traitement orthopédique bien compris du moignon s'adresse au moignon, à l'état général, et au psychisme du blessé. L'élément thérapeutique essentiel est la prothèse dite provisoire, mieux dénommée la prothèse thérapeutique. Celle-ci mobilise activement et passivement le segment du membre amputé, remplaçant avantageusement la mécanothérapie et la mobilisation manuelle. L'agent thérapeutique principal de ce traitement est le travail volontaire, organisé, mesurée, dosé, en qualité et en quantité ; c'est un exercice naturel commode et agréable.

Contrairement à ce qu'écrivent MM. les Profs. Rieffel et Gourdon, dans leur rapport au Congrès de Mai 1917, à savoir : " Pour le membre supérieur, il y a intérêt à n'appliquer précocement aucun appareil," nous estimons que la prothèse thérapeutique sera avantageusement appliquée le plus tôt possible après l'amputation, 8 js, 15 js, rarement davantage, et cela pour des raisons bien définies, qui intéressent le moignon lui-même et le segment supérieur à l'amputation.

On sait depuis longtemps qu'un moignon d'amputation ne peut rester bien adapté dans son premier appareil de prothèse pendant plus de deux à trois mois. C'est une notion classique en Amérique, où les fabricants de membres artificiels très perfectionnés et très étudiés, ne conseillent l'appareillage que plusieurs mois après l'amputation. Nous avons pu constater d'autre part

que la sensibilité effective du moignon est en rapport avec l'étendue de contact de la peau à la paroi interne de la gaine de l'appareil de prothèse, c.à.d. qu'elle est fonction de l'adaptation du membre artificiel au moignon. Pour ces raisons, il est donc nécessaire de former les moignons en vue de la prothèse définitive. Il faut pour cela confectionner des appareils à adaptation précise, exacte, et changeante, afin de suivre les évolutions successives des moignons au cours de leur consolidation.

On a pu observer en outre qu'une amputation d'un avant-bras provoque un processus d'atrophie qui envahit le bras et l'hémi-thorax en réduisant parfois considérablement la musculature. Il est donc nécessaire de lutter immédiatement contre ce processus; il faut chercher à en limiter les effets. Nous avons conseillé à cette fin le massage et la mobilisation des la deuxième jour après l'amputation. Mais cela n'est pas suffisant, et il est indispensable de faire travailler le blessé très précocement au moyen d'une prothèse thérapeutique bien conçue et bien réalisée. Nous n'avons jusqu'à présent rencontré aucun obstacle à l'application très précoce de cette prothèse, si ce n'est celui de contrarier parfois des habitudes d'oisiveté, heureusement peu répandues.

La prothèse thérapeutique contribue pour une large part à la formation du moignon; sa qualité essentielle est son adaptation: celle-ci doit être rigoureusement précise au cours de l'évolution de la forme due moignon.

On ne saurait trop déconseiller l'utilisation d'une prothèse mal adaptée, usagée, faite en série. Une telle prothèse ne couvre jamais le pourtour du moignon. C'est dans le but d'obtenir la plus grande exactitude possible dans l'adaptation que nous avons eu recours au plâtre pour la confection de nos appareils provisoires. Nous n'avons d'ailleurs qu'à nous louer de son emploi. La prothèse évolue comme le moignon. L'appareil doit être renouvelé assez fréquemment, du moins l'emboîture. Pour cela, il sera peu coûteux, facile à confectionner utilisable du jour au lendemain. Il nous faut 5 à 10 minutes pour confectionner l'emboîture j'un appareil d'amputé de bras et son prix de revient n'atteint pas deux frs. Nous estimons pour ces raisons que ces appareils constituent une bonne prothèse de travail, simple, solide, remarquablement bien adaptée, et d'un prix de revient presque nul. C'est le vrai membre de l'ouvrier; celui qu'on remplace sans retard et sans frais.

Le but de la prothèse thérapeutique est de mettre en action les groupements musculaires et de mobiliser les articulations. Le jeu articulaire devra être libre de toute entrave et l'action musculaire devra se faire normalement. Nous recommandons particulièrement de monter les appareils de façon à respecter l'orientation normale des axes articulaires et des axes longitudinaux du membre. Les moyens d'attache de l'appareil au corps ne contraindront pas la mobilisation des membres. La plupart des appareils existants ne tiennent aucun compte de ces données. Nous estimons que c'est là une lacune profonde surtout en ce qui concerne le bras de travail. Chez un amputé

d'avant-bras par exemple, le rendement sera meilleur si le coude est bien axé sur le coude naturel et si les muscles fléchisseurs et extenseurs de l'avant-bras sur le bras produisent leur action en direction normale. La fatigue surviendra moins vite chez un amputé muni d'un bon appareil que chez un amputé muni d'un bras artificiel commercial.

Le travail manuel est un élément thérapeutique de tout premier ordre. Par la diversité des mouvements qui le composent, on peut varier à l'infini l'action thérapeutique sur les groupes musculaires ou les articulations, que l'on désire traiter particulièrement.

Nous avons coutume de dresser, à l'usage de nos amputés de bras et d'avant-bras, un programme d'exercices simples et gradués, variables en qualité et en quantité. Chacun de ces exercices tend à diriger une action localisée sur certaines articulations et des groupes musculaires bien définis. Nous cherchons en outre à obtenir un effet propre sur le moignon lui-même.

Un moignon récent est sensible, surtout au voisinage de la cicatrice de la plaie d'amputation. L'appareil ménagera cette susceptibilité; il ne donnera aucun contact, il ne prendra aucun appui sur cette région terminale.

Parfois les mouvements ou les contractions musculaires sont douloureuses, surtout si le membre amputé a été immobilisé pendant longtemps. Les premiers exercices seront modérés, limités dans leur étendue et dans leur puissance.

L'amputé est appareillé aussi tôt que possible de 8 à 30 js après son amputation.

L'appareil est formé d'une emboîture en bandes plâtrées, au sein desquels sont fixées deux lames de feuillards. Celles-ci, rapprochées à leur extrémité inférieure, retiennent la pince terminale, porte-outil rudimentaire. Cette terminaison se déplace dans un plan frontal et un plan sagittal. On cale dans la position désirée. On possède ainsi assez de mobilité pour suppléer à l'absence des mouvements du coude et du poignet.

Les exercices sont bien déterminés de façon à ce que l'action thérapeutique soit bien localisée. Ce n'est pas un travail quelconque, visant à une production ou à une rééducation. C'est une série de gestes et de mouvements coordonnés, exigeant de la précision et de la mesure. Ce traitement réclame de la part du médecin une surveillance constante: il faut rectifier les attitudes des blessés, afin de créer le geste désiré, avec la direction et l'amplitude recherchées.

Le travail à la lime constitue une série d'exercices destinés à mobiliser les articulations du coude et de l'épaule. Chez un amputé de bras l'action est limitée aux fléchisseurs et aux extenseurs du bras. Chez un amputé d'avant-bras, on obtient une action sur les muscles fléchisseurs du bras et de l'avant-bras. Ces exercices simples et faciles doivent être bien conduits. Le

mouvement se fera autant que possible dans un plan parallèle au plan médian du corps. La longueur de la lime détermine l'étendue du mouvement; son poids et son mordant commandent la puissance de l'effort à produire. On augmente ou on diminue l'amplitude du mouvement de flexion du coude en faisant varier la hauteur de l'étau qui retient la pièce à limer, par rapport au limeur. Nous analysons le travail produit au moyen de la lime dynamographique de Amar; elle nous permet de mesurer et de décomposer l'effort.

L'amputé débute par le travail à la lime douce et courte, qui est rapidement remplacée par la lime longue, lourde et dure.

Le mouvement de la scie est sensiblement le même que celui de la lime, mais l'amplitude du mouvement est plus grande. Il s'y ajoute en outre l'intervention des pronateurs et des supinateurs ou de leurs suppléants, quand le sujet cherche à conduire le trait de scie marqué. Le travail à la scie constitue un exercice de mobilisation semi-passive, quand l'outil est manipulé par deux blessés qui se regardent; l'un et l'autre tire alternativement sur la lame réalisant ainsi l'extension passive de l'avant-bras et du bras de son assistant. Il est nécessaire que le mouvement se fasse dans le même plan, sensiblement parallèle au plan médian du corps. Nous conseillons à nos blessés de tenir la face interne du bras contre le thorax. On peut faire varier l'amplitude du mouvement avec la longueur de la lame de scie. On augmente l'effort à fournir avec le poids de l'outil, la dureté et la grosseur du bloc à débiter. De même, il est aisé d'obtenir une flexion ou une extension plus complète selon que le sujet se rapproche ou s'éloigne du morceau à couper. On peut ainsi mesurer l'effort demandé et l'adapter aux sujets à traiter selon la tolérance des raideurs articulaires. La scie peut être maniée par un seul sujet et animée de mouvements dirigés verticalement ou horizontalement. Dans le premier cas, on provoque le travail des adducteurs et des abducteurs du bras, c.à.d. le deltoïde et les muscles thoraco-brachiaux antérieurs et postérieurs. En même temps nous obtenons la mobilisation de l'épaule. Dans le second cas on obtient une action sur les fléchisseurs et les extenseurs du bras et de l'avant-bras.

Le travail au maillet (par exemple débiter une pièce de bois à la gouge et au maillet) a une action marquée sur les adducteurs et les abducteurs de l'humérus. (Le maillet est toujours tenu par le membre amputé). Il en est autrement chez les blessés du carpe et du métacarpe et chez les amputés des doigts. On peut chez ces derniers, localiser l'effet thérapeutique au poignet. Nous avons en effet étendu l'application de la méthode aux multiples blessés des membres. M^o le D^o Delrez traitera cette question.

Le travail au maillet est très utile chez amputés du membre supérieur: il forme remarquablement les moignons.

Pendant les premières heures les blessés supportent difficilement les contre-coups des chocs répétés du maillet sur le manche de la gouge, mais l'accoutumance est rapide et entière. C'est

un des exercices les plus intéressants à suivre. Au début, l'ouvrier est gauche, maladroit et craintif; au bout de deux à trois jours, il acquiert une grande confiance et une sûreté parfaite dans la direction et la puissance de l'effort. On obtient surtout un bon résultat s'il existe un peu d'émulation entre les blessés.

Ce traitement par le travail du maillet développe la sensibilité. Il raffermi les parties sensibles et avive au contraire la sensibilité de la peau en contact avec la paroi interne de l'emboiture. On conçoit par quel mécanisme la sensibilité dépend de l'adaptation de l'appareil au moignon.

L'amputé mesure l'effort donné à la sensation ressentie dans le moignon, il peut identifier la nature de l'objet qui frappe. Nous pensons qu'une sensibilité nouvelle naît par l'exercice au cours de l'évolution du moignon.

Nous avons d'ailleurs observé le même phénomène chez les amputés du membre inférieur. Nous avons vu des amputés de cuisse qui localisaient et mesuraient un choc sur leur pied de bois et nous avons eu des amputés de jambe qui sentaient parfaitement le sol sous leur pied artificiel. Chez eux aussi, la sensibilité acquise était en fonction de l'adaptation de l'emboiture du moignon.

Les exercices sont variés de façon à traiter alternativement les différents groupes musculaires. Les résultats obtenus sont remarquables, infiniment supérieurs à ceux obtenus par les moyens habituels. Le moignon subit une évolution rapide et favorable, il acquiert une souplesse et une puissance égale à la normale. Un moignon datant de 4^o jours est fort, mobile et d'une sensibilité complète. L'atrophie des muscles, qui existe quelque peu anatomiquement malgré ce traitement précoce et intensif, est fonctionnellement nulle. L'amélioration a été étonnante chez un sujet qui avait été très infecté; l'amputation faite dans le foyer de fracture avait donné une plaie profondément infectée par le streptocoque: En 15 jrs, l'évolution du moignon fut tellement avancée que le sujet mit en usage trois appareils.

Le matériel nécessaire est très rudimentaire: quelques bancs de menuisier, quelques outils et un peu de matériel, bois ou fer. On peut d'ailleurs, dans une certaine mesure mettre, à profit le travail fourni.

Toutefois, ce traitement exige du médecin une présence constante au milieu de ses blessés au travail.

Les exercices varient en qualité, en intensité et en durée. Le premier jour une heure de travail suffit; le deuxième jour, on peut pousser jusqu'à deux heures, jusqu'à trois heures le troisième jour. Les jours suivants, les amputés sont occupés 4 ou 5 heures. Nous estimons que ces heures de travail sont nécessaires; il faut de la persistance et de la continuité dans l'effort fourni. C'est là, à notre avis, un facteur important de succès.

L'adaptation du membre artificiel doit rester parfaite; il est nécessaire de renouveler les appareils devenus trop larges: c'est d'ailleurs facilement et rapidement fait.

Pendant combien de temps est-il utile de maintenir ce traitement? Nous ne pourrions répondre catégoriquement à cette question. Tout dépend de la volonté et des intentions du mutilé. Au point de vue du moignon, nous pensons qu'après deux ou trois mois, suivant les cas, le traitement peut être terminé. Au point de vue du mutilé, il devrait se prolonger, selon nous, jusqu'à l'appareillage au moyen du membre articulé, chez les amputés exerçant un métier manuel. La rééducation professionnelle devrait se faire en continuité directe avec la restauration fonctionnelle.

Chez les désarticulés du poignet, les mouvements de pronation et de supination sont conservés, si le carré pronateur a été intégralement respecté, et si les articulations radio-cubitales inférieure et supérieure ont été ménagées et entretenues au cours du traitement chirurgical, on peut dans ce cas, espérer une récupération fonctionnelle complète de ces mouvements. Le travail recommandé à ces amputés consiste à forer des trous au moyen d'une mèche munie d'un manche spécial, ou à visser des vis à l'aide d'un tourne-vis monté à cet effet. Toutefois, l'emboîture de l'appareil n'engâînera que la moitié inférieure de l'avant-bras, afin de ne pas s'opposer au déplacement du radius sur le cubitus. Depuis près d'un an nous appliquons le traitement par la travail à tous nos amputés du membre supérieur. Ceux qui ont consenti à écouter nos conseils n'ont connu ni les raideurs articulaires, ni les atrophies musculaires. Leur moignon n'a été le siège d'aucune douleur, fistule ou abcès; son évolution fut simple et rapide.

Les moyens que nous préconisons sont rudimentaires, peu coûteux et à la portée de tous le monde.

Le traitement orthopédique précoce des amputés influe notablement sur l'état général et le psychisme du mutilé.

En stimulant les organes de la vie végétative, on améliore l'état général du blessé: rien n'est plus salubre en effet, qu'un travail léger dans un atelier bien éclairé et bien aéré.

Le travail thérapeutique améliore le psychisme du mutilé. Il reconforte les amputés récents non appareillés. Aussi doit-on conseiller le groupement des amputés dans les formations sanitaires. Ce traitement influe aussi sur le moral de l'amputé appareillé. En occupant ce dernier par un travail intéressant, on ramène la confiance en son esprit.

En ce moment, on a trop la tendance, selon nous, de chercher à faire naître des suppléances du côté du membre sain. Le bras amputé conserve une réelle valeur d'usage. Il faut éduquer le blessé vers son utilisation immédiate et complète; de la mise en

valeur des fonctions subsistantes dépendra la capacité productrice du mutilé.

Le moignon, plus que la prothèse, détermine le rendement du travail du mutilé. Le traitement orthopédique forme les moignons en les améliorant : il constitue donc un facteur essentiel de bonne rééducation professionnelle. Il devrait être généralisé, et nous regrettons qu'une chose aussi simple, aussi peu coûteuse, aussi rationnelle, aussi efficace et aussi bienfaisante, tarde à se répandre.

PAPER ON FITTING AND ADJUSTMENT OF ARTIFICIAL LIMBS.

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I have been honoured with the request to lay before you some points in connection with the subject of the Fitting and Adjustment of Artificial Limbs.

Before an artificial limb can be fitted care must be taken to see that the stump is free from any morbid condition.

There must be no painful bulbous enlargement of its divided nerves. There must be no pain due to a neuritis. The end of the bone must not be painful, owing either to an enlargement, to a conical condition, or to the presence on its edge of sharp spicules of new bone. There must be no sinus, leading either to necrosed bone or to an unremoved foreign body. The skin over the stump must be healthy, movable and not inflamed. There must be no abscess. The scar should be thin, movable, and neither eczematous nor ulcerated. The nearest joint should be healthy and movable, not fixed by fibrous or bony ankylosis, or by contraction of muscles, or owing to the presence of contracting scar tissue on its flexor surface. A long, loose, flabby stump, or one too fat, is difficult to fit. There are situations in the body where a stump may be too long or too short. The stump should not be puffy or oedematous.

Any of the above morbid conditions, if present, must be suitably treated by operation or otherwise, before the patient can be properly fitted with an artificial limb.

Accurate fitting of the thigh or leg socket of the artificial limb is of vital importance. Successful fitting depends largely upon the experience and intelligence of the fitter, as amputations, although similar in appearance, vary indefinitely in the manner in which they can bear pressure.

Each limb should be specially constructed for the individual case. Special note should be taken of the condition and type of stump, *i.e.*, whether it is fleshy and flabby, or fleshy and firm, or thin and firm, or atrophied, or puffy, whether it changes in size from day to day, and whether the bone is well covered or not.

Standardisation of the limb bucket is impossible. Certain parts of an artificial limb may be standardised, but the fitting of an artificial limb is an individual proposition. Although it is possible to make a limb for a man from measurements, aided by a well-made cast, yet it is always best for the patient to attend the instrument-maker.

An artificial limb should be strong, light and durable. It should be made of materials of the highest quality, so that a minimum of weight can be combined with a maximum of strength, the secret of successful construction being that every ounce of unnecessary material is removed at certain safe places, so that the weight is reduced without impairment of strength.

The weight of the distal parts (foot and hand) requires special consideration owing to their leverage.

The normal weight of a full-length artificial leg may be permitted to vary from five and a half to eight and a half pounds. It is important that all bi-lateral joints should act in unison and be perfectly true, to avoid friction and unnecessary wear and expenditure of energy.

Artificial limbs for the lower extremity have approached certain standard patterns. Thus, when the War Office Committee obtained all the parts of the various limbs with which they were acquainted, and assembled together the best of these parts, the total assemblage was practically identical with the improved artificial limb which was then made for us at Roehampton.

A few words about each of the following parts of an artificial limb may be not inappropriate :—

- (1) The foot ;
- (2) the ankle joint ;
- (3) the leg ;
- (4) the knee joint ;
- (5) the thigh bucket ;
- (6) the pulvic band ; and
- (7) knee locking device.

(1) The foot should be of wood. It is lighter than when made of any other material. It should be covered with vellum, and jointed at the metatarsus.

(2) The ankle joint should be movable. It is not essential that this should be made with a ball-bearing joint. Experience has shown that the ankle joint is quite secure if the transverse bar rests upon and rotates in metal grooves in the foot, and is fastened by an inverted **U**-shaped staple secured by nuts in the sole (Hanger, Essential). The range of movement at the ankle joint should be about 30 degrees. The movement is usually one of flexion and extension only. Some makers provide a lateral rocking movement with which some patients are very delighted. The ankle movement should be stopped by thick rubber buffers in front and behind the axis of the ankle motion. Many makers still use the tendon principle to replace as far as possible the action of the tendo-Achillis. They claim that it enables the wearer to rise on the ball of the foot when taking a step, thus obtaining a greater leverage in carrying the body forwards. When the weight of the body is on the natural leg, the tendon certainly assists the stump in bending the artificial knee.

(3) The leg. The leg socket is of willow, shaped to the leg and hollowed out, with solid slides, or with a central core of solid wood or of steel tubing, and with thin detachable sides. In some cases the socket is made of leather, strengthened with steel insets. It is attached solidly to the foot below and to the thigh socket above by means of lateral steels jointed at the knee.

(4) The knee joint. The knee joint should be of solid and specially tempered steel construction, attached to the lower limb by means of a steel bolt passing through steel joints attached to the leg portion. The steel bolt works in fibre bearings, the latter being easily replaced when worn. Every knee joint should be fitted with ball bearings.

Extension of the knee is obtained in Mr. Ernst's leg by means of a strong elastic band at the front of the knee, and in Rowley's and Hanger's legs by suspension straps passing from the front of the leg over the shoulder. Mr. Grossmith has made a very useful improvement in the knee action of the Anglesey leg, by means of which he claims the production of a light and quick step. This is attained by means of a simple propelling power consisting of springs, which is so arranged that whilst in walking it is sufficiently strong to support the dead weight of the foot, bringing the foot forward when the knee is bent beyond a right angle, yet in the sitting position it exercises no control over the limb until the patient again rises. The use of the anterior patella strap, which is apt to wear out, is thus avoided. Messrs. Hanger obtain the same condition of rest when the knee is flexed, and power of extension when the extension reaches a right angle, by means of a special wooden lever and an elastic web. When the knee is flexed to an angle of 90 degrees, the lever is out of action. Mr. Ernst has recently adopted the suspension strap method of extending the knee.

(5) The thigh bucket should be shaped so as to fit the upper part of the thigh accurately, allowing a broadened surface for the tuber ischii to rest upon. It should not extend too high on the inner side, otherwise the rami of the pubes and ischium are pressed upon and discomfort is caused. The inner surface should be well hollowed out opposite the adductor longus tendon. The lower end of the bucket should be dovetailed into the portion forming the knee joint, and should be strengthened by inserted steels. The portion forming the knee joint should be solid at the lower end. It is perforated on each side by the above mentioned knee bar, the ends of which are supported by fibre bushing, and are jointed to the lateral steels of the leg bucket.

(6) Pelvic band. The pelvic band is an appliance introduced by Mr. Ernst. It consists of a steel pelvic girdle which surrounds the pelvis just below the iliac crests. The metal is moulded to the pelvic girdle whilst in a soft state, and is then tempered. Attached to it is a T-shaped piece of steel which is jointed, with a similar steel bar extending upwards from the top of the thigh bucket. The joint should be placed half an inch above the centre of the great trochanter. This pelvic girdle

should extend a little in front of each anterior superior spine, and should be covered with leather, the ends of which are buckled together.

Every case of amputation at or above the middle of the femur should be fitted with a properly fitting pelvic band. There is no doubt that it not only gives a firm fixation of the limb, but prevents eversion of the foot and rotation of the thigh bucket. It enables the patient to gain much in power, security and speed.

The imperative necessity of this pelvic band for short femoral stumps is now recognised by most makers.

(7) Knee locking device. There are many cases where the femur has been amputated at a point two inches below the hip joint. Such a stump gives the patient very little or no control over the artificial limb. It is well nigh impossible for so short a stump to control the movements of the knee joint so as to ensure perfect safety in walking.

A locking joint at the knee overcomes these difficulties. In the majority of these cases it is necessary that the patient at first should use the limb fixed at the knee, but this locking joint should be so devised that should the patient develop sufficient power in the stump the joint can be freed, and the limb gradually used as an ordinary articulated limb. The locking joint enables the patient to bend the knee at will when sitting down.

It is advisable that every patient who has a very short thigh stump, or whose work entails walking on hilly ground, should have his artificial leg fitted with this knee locking device.

Dealing first with the lower extremity, and taking the amputations in their order from above down, the following points should be carefully observed :—

Hip amputation.—If the amputation has been at the hip joint, care should be taken to see that the stump is not too loose and flabby. Such a stump is apt to result after amputation by Furneaux Jordan's method. An accurate mould should be taken of the pelvis and tuber ischii, to enable a leather encasement to be made, which fits accurately, and in which the patient sits. The leather should extend upwards as high as the iliac crest, and to an equal level back and front, almost to the median line of the body. This constitutes what is known as a tilting table. It is attached to the artificial limb by a strong outer steel fitted with a patent locking joint which allows flexion forward, and is actuated by a trigger movement. In the standing position the patient has the outer joint locked, and walks with the leg perfectly rigid at the hip; but when desiring to sit down, the trigger is raised and the joint is set free. The tilting table in the sitting position is still in position on the stump. When the patient wishes, the hip joint locks automatically. The limb is attached to the body by means of the pelvic band and shoulder braces.

Upper thigh amputation.—Should the thigh bone have been amputated just below the small trochanter, the upper portion of

the thigh bone is apt to become flexed forward, and its end to project. This makes it exceedingly difficult to fit, so as to prevent the stump coming out of the bucket when the patient sits down or stands up; nor is it easy to fit a tilting table to such a projecting short portion of the femur. In certain of these cases it is imperative to remove another two inches of bone.

Mid-femoral amputation.—When the amputation is at or above the middle of the femur, it is imperative, in my opinion, that every case should be fitted with a pelvic band. Experience proves that wherever this is fitted, the weight of the braces on the shoulders is reduced considerably, and the patient finds that the centre of gravity of the limb is brought much nearer the body by this attachment. The pelvic band should fit most accurately, and not reach higher than the level of the anterior iliac spines. The centre of the hip joint should be in advance of the centre of the knee joint, so as to ensure the proper lock when the weight of the patient is borne on the limb.

The proper adjustment of the bucket of the artificial limb in every thigh amputation is essential for the comfort of the patient. In every case a model of the stump should be taken. Limb-makers differ in the way in which they take a model of the thigh stump. Some makers take a model of the stump in plaster of Paris; others in wax. It should always be remembered that the patient has to walk upon the limb, and therefore the plaster model should be taken with the patient in the upright (standing) position, and if possible it should be moulded by pressure, so as to represent the shape of the stump when the pressure of the body weight is exerted upon it. Messrs. Rowley used to obtain a model of the stump by filling the inside of the upper third of a wooden bucket with mouldable material, which first takes the exact shape of the stump when the patient is standing upon the upper end of the artificial limb, and then hardens. It should be remembered that the upper end of every thigh bucket should fit accurately, should not press on the rami of the pubes, should take a firm hold below the tuber ischii, and should fit accurately round the outer surface of the femur. The upper edge of the inner surface should be thin, and moulded over the adductor muscles, which, whilst the plaster cast is being taken, should be made tense by the patient.

The bucket of an artificial limb for mid-thigh amputation is usually made of wood. The wood should be willow, seasoned slowly for five years. The supply of such willow in this country is almost exhausted, and most of the wood now in use has been kiln dried. This method of drying willow increases the proneness to one of the defects which are inherent in a wooden bucket, viz., the liability to crack. This tendency of the bucket to crack should be obviated by the insertion of screws transversely around its upper part, as is done by Messrs. Hanger.

Further, it must be remembered that all stumps have a tendency to shrink, and that every wooden bucket applied to an amputation stump must inevitably in time become too large, and

allow the stump to move about freely within it, thus causing discomfort by friction of the skin, necessitating renewal at an early date.

Lower third thigh amputation.—Should the amputation be in the lower third of the leg, or be supra-condylar, the bucket, in my opinion, should always be made of leather. A plaster cast should be taken of the stump, a plaster model of the stump obtained, and the leather should be moulded in a wet state on the exterior of the plaster model. When dry, the leather retains its shape accurately, and fits the stump like a glove. The leather should be bark-tanned sole leather, covered with vellum, open up the centre of the thigh anteriorly, and made to lace. A thigh bucket thus made will fit accurately below the tuber ischii, will not press unduly at any one spot, and can be laced up from time to time so as to counteract the shrinking of the stump. Moreover, in consequence of the close fitting of the thigh bucket, these patients are enabled to dispense with safety with the necessity of wearing a pelvic band.

An artificial limb made with a leather thigh bucket fits perfectly and is exceedingly comfortable, and as it can be adjusted it continues to fit the limb, and thus movement and friction between the thigh stump and the bucket are prevented.

Amputation at or just above the knee.—For a Stephen Smith, a trans-condylar, or a Stokes-Gritti amputation, an accurately fitting model of the stump should be obtained whilst moderate pressure is being borne upon the lower surface, and a tightly fitting case of thick sole leather should be made, enclosing the whole stump. It should be opened up and made to lace along the centre.

For a trans-condylar amputation, it is wise to pad the edge of the cut femur before the model is taken. Pain from pressure is often experienced in this amputation stump if this precaution is not adopted. The sharp edges of the femur are apt to cause irritation of the skin from pressure, and in some cases the bone ulcerates through the skin.

Of the above three amputations, incomparably the best is a Stephen Smith. The condyles are broader, they are smooth, and they are accustomed to carry weight.

It is essential that the femoral condyles should be well covered with loose movable integument. It is preferable that the patella should have been removed.

The artificial limb is made with lateral steels, attached externally to the leather thigh case, and jointed at the level of the knee joint.

Amputation at the site of election.—Should the amputation be below the knee joint, the best stump is that where the tibia is cut transversely, with its anterior edge sloped off. The fibula should have been divided three quarters of an inch shorter than the tibia, because it grows after division. The skin should be

movable, well nourished, and devoid of scar. The best point at which to cut the bone is four to seven inches from the upper edge of the tibia. A longer stump loses in vitality at its lower end, and a shorter one loses in power over the leg bucket.

The weight in such an amputation is occasionally borne on the actual end of the stump, more frequently on the lateral surfaces below the knee joint (viz., on the internal tuberosity of the tibia and upon the head of the fibula), and partly by the friction of the thigh bucket on the thigh. Occasionally it has to be borne by the tuber ischii resting upon the upper end of the thigh bucket. The best gait is obtained where the weight is carried below the knee, and preferably on the end of the stump. In any case, it is imperative to adjust the weight bearing and the form of the artificial limb to the amount of pressure which the end of the stump or the lateral surfaces of the tibia can bear.

In every case an accurate plaster model of the stump should be obtained, and the bucket should be accurately moulded so as to fit accurately the inner tuberosity of the tibia, the head of the fibula, and the patellar tubercle.

The leg case may be made of wood or leather. The stump should fit accurately into the leg case, or it may be enclosed in a leather slip socket or cap, which fits into the wooden or leather leg case, or this leather socket may be slung by straps from, or be continuous with, the lower edge of the thigh bucket. For very short tibial stumps this latter arrangement gives the more perfect and quite satisfactory results.

Of the many makers who are adepts at fitting this artificial limb, the writer has come to the conclusion that for strong serviceable legs which have to stand hard wear, none can excel those made by Messrs. Masters for fit, durability and efficiency. There are other makers who run Messrs. Masters very closely, viz., Gillingham, of Chard, Grossmith, and the Essential Limb Company. The writer has on many occasions marched two patients, each with double amputation at the site of election, one man fitted by Masters, the other fitted elsewhere, and the walk of the patient with Masters' legs has nearly always been slightly more natural than those made by any other maker. The artificial leg made by Messrs. Masters for this amputation is fitted with an adjusting screw, whereby in a few moments the length of the tendon can be regulated. This enables any stretching of the tendon to be taken up. The tendon is attached to a steel prolongation backwards of the lower end of the thigh steel. Thus more leverage is obtained, and the heel is elevated as the knee is straightened.

Syme's amputation.—In Syme's amputation the stump should be able to stand pressure upon its extremity. It should have no tender nerve in it. Should there be one, it should be removed. It is preferable to encase the stump wholly in leather, as is done for a Stephen Smith amputation. A stump so encased is in no danger of being ulcerated from friction, and carries the

weight of the body more safely. A leather case should carry lateral steels jointed in the foot. The stump rests on a cushion within the socket. An anterior elastic strap is attached below to the top of the instep, and above to each side of the front of the leg.

These stumps, when healthy and able to bear pressure, do not require thigh bearing or shoulder straps. If, however, the end of the stump remains sensitive, the artificial leg will have to be provided with a bucket whose upper end fits accurately the tuberosities of the tibia and head of the fibula. In rare cases there must also be provided a leather thigh bucket, laced in front, and supported by strong lateral steels jointed at the knee.

Where the amputation has been performed as recommended by Syme, there is room in the foot for the joint to be placed at the level of the normal ankle. When, however, the malleoli have been left, the stump is too long to enable this to be done. The artificial foot is then too short vertically, and the joints have to be placed in the lateral steels external to the foot. This produces increased lateral diameter. This is especially the case after Pirogoff's amputation.

Chopart's amputation.—Care must be taken to see that the heel is not drawn upwards, and that the sole rests flat upon the ground. A leather casing should be moulded accurately to the foot and ankle, and should then be attached to the instep of the anterior half of the foot. Lateral steels are usually necessary, and there should be an articulation opposite the ankle joint, so that free flexion of the foot at the ankle joint is permitted.

Artificial Limbs—Upper Extremity.

With regard to the fitting of artificial limbs for the upper extremity, there are two considerations which militate against finality: (1) that it is slowly becoming an honour to have lost an arm and to show it, and (2) the opposite arm slowly and continuously develops in usefulness, so as in many cases entirely to replace the lost arm.

At the beginning of the war there were practically only two regions in the arm and forearm which could be fitted with artificial arms, viz., at the centre of the arm and centre of the forearm. Now any amputation can be dealt with. In every case a plaster model of the stump should be made, and the artificial arm fitted thereon.

We have at the present time some twenty different types of artificial upper extremity. In advising what particular arm shall be fitted, it is imperative that the fullest consideration should be paid to the work of the patient.

For officers and for men engaged in clerical work, and who have lost their arm at the middle of the humerus, there is no arm to compare with Carnes' artificial arm.

The Carnes' arm is made on a plaster model and according to measurements. With this appliance a patient is enabled to bend his elbow and carry anything directly to the mouth. He can write, strike a match and light a pipe, raise his hat, shake hands, carry parcels and bags, and perform many other acts. It takes 3 months to make, is American, and costs £40, but for suitable cases it is worth the money.

Upper arm.—For amputation of the upper arm, Anderson's Worker's arm has been designed with the object of taking advantage of the principle that the shorter the arm bucket the greater the control of the patient over any appliance attached thereto. The essential point is that the arm bucket is made of leather, closely moulded to, and the exact length of the stump. There are arm and forearm adjustable buckets, each strengthened at each quadrant by means of a steel frame. Each bucket can be tightened by means of straps and buckles. The forearm is attached at the level of the opposite elbow to a steel prolongation from the end of the arm bucket.

This arm can have a detachable mechanically-operated forearm. With such a forearm the patient has mechanical control over the elbow and thumb. The mechanism is enclosed in the forearm, and is operated by attaching a Bowden cable to a lever projecting through the forearm, which cable, when pulled, disengages the ratchet, and elevates the forearm as required, which will again automatically lock in the new position. The forearm is lowered by putting a tension on the cable, which disengages the ratchet. By the action of a small lever suitably placed, the locking ratchet may be put out of action, giving a forearm which may be moved freely at the elbow by the Bowden cable.

In this arm, movements of the opposite shoulder and arm are utilised for the purpose of moving volitionally the artificial elbow and thumb.

Short upper arm.—For short upper arm amputations, a special leather cap should be fitted. To this cap is attached a steel plate, which covers the acromion process, projects downwards, and is jointed to a similar steel plate which is firmly attached to and embraces the upper part of the arm bucket. This special form of attachment not only relieves the stump of the weight of the artificial limb, but controls inward and outward rotation of the arm.

For shoulder joint amputations.—For a workman who has lost his arm at the shoulder joint, the arm first made by Blatchford, at my suggestion, fulfils many requirements. An exact plaster of Paris model is taken of the shoulder region, and a leather cap accurately fitted on the model. This shoulder cap gives a very firm attachment to the trunk, and prevents friction upon the bony points. With this leather cap the artificial limb is subsequently incorporated. In this arm also movement of the elbow and thumb is volitionally performed by means of Bowden bands, as in the above-mentioned Anderson's Mechanical Worker's Arm.

Upper arm amputation.—An artificial arm for above elbow amputation has recently been made by Mr. Adams. It has certain advantages. It is light and strong, and the locking of the elbow joint is stronger than in some other makes, and is so arranged as to prevent wear. The forearm is detached without screwing. Any appliance attached to the wrist plate is quickly detached. At the elbow it has an eccentrically placed spindle. Less force is thus required to bend the elbow. The weight of the limb is 2 lb.

Amputation at elbow.—Should the amputation be at the elbow joint or through the forearm within two inches of the elbow, the whole of the stump should be enclosed in a closely-fitting leather case, made to lace up the centre. This case carries lateral steels continued into the artificial forearm, and jointed at the elbow.

Forearm amputation.—The best site of amputation of the forearm is at the lower end of the middle third. A forearm so amputated gives the movements of pronation and supination, and the stump is not too long. For such an amputation the artificial arm should have a bucket carrying a metal end plate, to which can be attached various appliances. The most secure method of attaching this forearm leather bucket to the arm is by soft leather prolonged upwards, enclosing the lower third of the arm and made to lace up in front, as is done in Williams' arm.

Should the forearm have been amputated at a point between two and three and a half inches from the tip of the olecranon, it will be found that this stump is too short to move a forearm bucket. In this case it is well to remove by postero-lateral incisions the supinators, extensors and flexors of the forearm just below the elbow joint. This operation gives a flattened anterior surface to the stump, on which the upper part of the forearm bucket can rest securely.

Wrist joint amputation.—Although the pronation and supination movements are retained in this amputation, the stump is too long for practical purposes. A new wrist joint may be made by removal of one and a half inches of the radius and ulna at a point two inches above the end of the stump. Thirty degrees of flexion extension movement can be obtained in this new wrist, and this movement can easily be transformed into closure of the thumb and fingers. Mr. Ferris has made for me several forearms and hands to effect this. Thus, a man who has had this operation done can voluntarily close the artificial fingers on to the thumb. In my opinion, this operation gives a nearer approach to natural movement in the hand than anything yet seen in an artificial upper extremity.

Amputation at the wrist.—For this amputation the artificial forearm made by Hobbs, which fits accurately to the forearm and carries within it an automatic wrist twisting device, supinating the hand when the elbow is flexed, is an excellent one. Extension of the fingers is obtained by means of a band which passes up the centre of the forearm, and from thence to

a webbing passing round the patient's chest. Closure of the fingers is effected by a spring movement.

Appliances.—Various methods are adopted for attachment of the various appliances: (1) by a screw movement; (2) by a bayonet thrust and locking (a very rapid method, and very efficient for light implements, such as a razor, brush, &c.); (3) by a hexagonal bolt passed into a hexagonal aperture in the centre of the forearm end plate and locked there (very rapid and very strong); (4) by a bolt, cogwheel shaped with eight cogs, which fit into similar depressions on the inner surface of the above aperture (this is very rapid and very strong. It has been invented by a New Zealander named McKay, who has worked as a joiner for years and done any kind of carpenter's work with tools so fixed), or (5) by a special facing plate dropped into a slot at the end of the artificial forearm and locked by means of a cogwheel shaped bolt passing into corresponding slots on the inner surface of the end piece of the artificial forearm. The latter method of fixing has been invented by Messrs. Rooney, of Belfast, and is designed to prevent the attachment becoming loose, a condition which is apt gradually to supervene, and also to obviate the corresponding liability to fracture of the lower end of the forearm bucket.

Of all these methods, fixation by screw is the more usual. This can be securely locked by a winged nut. The thread is a $\frac{3}{8}$ ths inch Whitworth screw, which is in universal use in the engineering world.

"ON THE LIMBLESS."

BY SIR WILLIAM MACEWEN, F.R.S., LL.D., Regius Professor
of Surgery in University of Glasgow.

In considering the limbless, the subject is so large and has so many sides that it is impossible to deal efficiently with all of them within the quarter of an hour to which all papers of the Allies' Conference have very properly been limited. One has, therefore, to select a few salient points for discussion.

A few remarks on the Surgical Aspects of Amputations relatively to the Utility of the Stumps.

The difficulties encountered by the surgeon in ships during engagements and the surgeons in the primary or even the Army base hospitals are so great that one wonders that the results are as good as they are, and many times they are so good that they leave nothing further to be desired.

Examining thousands of amputations it is found that where it has been possible to secure the opposing muscles of the limb (flexors, extensors, abductors and adductors) either by fixation to the bone, which is best, or to cicatricial tissue well covered by mobile skin at the end of the stump—that the utility of the remaining part of the limb is greatly enhanced and the economic value of the individual is increased. It is also obvious that where this has been obtained, the padding of the stump covering the osseous extremity has usually been secured and the shrinkage of the soft tissues has been prevented.

When asepsis prevails, the closing of the cut nerve end, within its own sheath, aids in preventing neuritis and lessens the exuberant production of the fibrous tissue which forms the bulbous extremity of the nerve, which latter is so often troublesome in amputation. Neuritis in a distal nerve is not always due to a distal peripheral lesion, but sometimes to one in the main trunk much higher up. It is obvious that removal of distal portions of nerves will not relieve such patients of pain. Investigation of the main trunks by screen or photo sometimes reveals the lesion.

In one such case, a pain in a distal nerve of forearm was found to be due to a piece of shrapnel in one of the trunks of the brachial plexus of which the patient was unaware. In another case, pain at a peripheral spot, in a below knee amputation, was due to a splinter of bone, the point of which penetrated the sciatic nerve between trochanter and pelvis.

Rigid cicatrices and flaps of skin adherent to the bone are productive of much discomfort to the wearer of artificial limbs.

These may, of course, be prevented at the time of amputation by providing ample flaps—especially in the thigh—and by treating them when they do tend to occur by extension and careful massage during the healing process. The aid of button sutures—the buttons being made of block tin—is of service in such cases, as it does away with the necessity of using adhesive plaster and weight and pulley. The buttons ought to be double threaded in order to allow for increasing or relaxing the tension as required.

The attempt to make use of the living tendon covered with cutis to move fingers of an artificial arm may be of service in exceptional cases.

Causes of Retardation of Healing of Stumps.

Many men come into the preparatory hospitals with sinuses of many months' duration—sometimes of years—from which constant suppuration ensues, and which produce frequent recurrent inflammatory conflagrations ending usually in abscess, which upset the patient and greatly retard his recovery.

The longer those suppurating foci exist, the greater the formation of cicatricial tissue and the more adherent the soft tissues become to the bone. It is a pity to allow these suppurating foci to exist for such a long period, as a small operation suffices to cure them.

Osteomyelitis, a frequent cause of painful stumps and long-standing suppuration, ensues when the exposed marrow of bone becomes germ infected. The infection spreads up the shaft, necessitating operation and sometimes even re-amputation.

The causes of retardation of the healing of stumps in sailors and soldiers—apart from the occasional occurrence of tuberculosis, which requires special treatment—are to be found in the presence of germ-laden substances which have been carried into the tissues in a vehicle, usually of a porous nature, such as articles of clothing, splinters of wood, sloughs of tissue and such substances as are non-absorbable and yet afford cover for germs to propagate, being kept at a proper temperature and supplied with abundant pabulum. Pieces of shrapnel or shell with irregular ragged edges, sometimes containing in crevices, soft germ-impregnated tissue. Pieces of necrosed bone which have been infected form a very suitable home for germs and retain them for long periods, maintaining persistent suppuration until removed. Any of the pyogenic organisms may be found in these cases, but the common streptococci and staphylococci are most prevalent.

Though not a cause of retardation in healing, the mode in which new bone is sometimes thrown out into the soft tissues at the end of stumps, in irregular pointed masses, may give great dis-

comfort to the wearer of artificial limbs. The osteoblasts, meant for the closing of the bone marrow, here find themselves subjected to strange environment, and possibly to frequent and irregular movement, which disperses them among the lacerated tissues where they wander, no longer having purposive action, and form detached or irregular masses among the muscles. This may be greatly modified or prevented by periosteal flaps over ends of bone or by careful moulding of the stump during its early progress after amputation and by keeping it free from excessive movement.

X-rays shows the formation of new bone, and often guide the surgeon to propose modification of artificial limbs or to relieve the necessity for this by removing the irregular mass of bone. The methodical use of X-ray for examining the condition of stumps is of service. It shows shrapnel, bullets, necrosed bone, osteomyelitis when marked, as well as new formation of bone sometimes enclosing foreign bodies.

The Length of Time which should be Allowed to Elapse after Amputation before an Artificial Limb should be Applied.

Hitherto the practice has been to allow six months as a minimum to elapse before putting on an artificial limb. This is much too long both for the stump and for the man. As soon as firm healing of a stump has been secured, a provisional limb ought to be supplied, and the patient ought to wear it without resorting to crutches. The nerve energy is thus early directed to the newer problems of muscular control and development of new movements in the stump, and thereby increases the functional activity of the part and prevents disuse atrophy. The brain and the heart are thus benefited. The former by the stimulation of the cortical cerebral centres controlling movement of the stump, the latter by securing and retaining the increased cardiac energy resulting from amputation of the limb and turning it to account for rejuvenating the health and strength of the body. This is apt to be lost were the patient allowed to remain inactive for long periods after amputation, when fatty degeneration of the muscles generally, and the heart in particular, is apt to ensue. Local benefit results from hardening of the stump and adjacent parts whenever pressure requires to be borne, and by the hastening of the shrinkage and remodelling of the limb to nearer normal dimensions. The practice thus obtained enables the patient to adapt his muscles to the new problems of equilibration and generally fits him for his new mode of life.

Provisional Limbs, their Forms and Uses.

The term "provisional limb" has been applied to those forms of apparatus which have been used for temporary and preparatory purposes. It has been customary for those who had amputation

of the lower limb to use crutches for ambulatory purposes. In doing so the stump is left hanging as a useless appendage, not participating in the movement, and, if sufficient time elapsed, disuse atrophy resulted.

Instead of crutches a provisional limb is applied, so that the stump can come quickly as possible to participate in the action of walking and thereby develop its muscles and nerves under the control of the spinal and cerebral centres. The parts of the limb are thereby energised and their new function developed. The balance of the body is adjusted to the new conditions and the equilibrium established.

The parts of the body through which its weight is transmitted to the provisional limb becomes hardened by use and ready to bear the pressure of the body on the permanent limb when it is ready to be worn. The necessity for massage and electricity is lessened by wearing provisional limbs, though both may be required in special cases. Though the cause of a sinus ought to be sought for and removed, yet the presence of a sinus does not generally preclude the wearing of a provisional limb. On the contrary, the latter often aids in the healing of a sinus by its local stimulation, the movement favouring the loosening of the foreign body and aiding its discharge, and it further aids by restoration of health. Dressings can also be applied to the extremity of the stump through the open bucket of the Erskine provisional limb.

The shrinkage of the circumference of the stump to its permanent dimensions is rapidly secured by the wearing of provisional limbs, so that from all points of view the application of the provisional limb is desirable. It ought to be applied as soon as the wound of the stump is firmly healed. The patient at the beginning is weak and cannot stand prolonged use of the limb, and this in one sense is an advantage, as time is afforded for the stump to get gradually accustomed to the use of the provisional limb and excoriations and pressure points are thus avoided. The mental effect is likewise of service as the patient attains progression by an apparatus more closely applied to his body and less obtrusive than crutches and the folded empty trousers.

The forms of provisional limbs are very various. Among others may be mentioned : bandages soaked in plaster of paris, paraffin wax, starch, glue, &c., making a stiff mould of the limb which may be strengthened by strips of wood or metal. All these may be easily and quickly applied. Rolls of fibre, millboard or wood made in conical shape and fitted with straps have their advocates and serve a useful purpose.

As applied to the thigh, there are certain disadvantages with most of these appliances. The first is that owing to the shrinkage of the stump the plaster bucket requires frequent renewal. The second is that the top of the plaster or fibre bucket is not easily

made to fit the pelvis with comfort to the patient while bearing the weight of the body.

The Erskine Provisional Limb and Pin Leg.

The experience obtained at Erskine Hospital with numerous forms of provisional limbs, especially for thigh amputations, made it apparent that there was still much to be done in this direction, and investigations were begun toward that end in the Erskine Research Laboratory. These have so far resulted in introducing a new form of provisional limb which has been extensively tried at Erskine and has been found efficient and agreeable to the patient. It is light and can be quickly applied. It is in the form of an adjustable peg-leg, with adjustable bucket to accommodate the shrinkage of the stump, and an elliptical ring made to suit the anatomical configuration of the pelvis. It is simple in construction and all the parts are standardised. The pelvic elliptical rings are made in eight sizes according to their circumference and these govern the width of the corresponding buckets. Besides this, to each width of ring there are various lengths of buckets to suit the levels of different amputations of the thigh.

When a patient is to be fitted with a provisional limb a set of pelvic numbered rings are given him, and he is asked to select the ring which fits him best. This he does by threading his leg on the ring and getting it to fit at the pelvis. It ought to be made to fit accurately. When this has been done, the size of the ring selected is ascertained, the length of the stump taken; when the attendant selects the corresponding size of provisional limb from stock one is fitted to his limb, the straps adjusted, and he is able to walk.

DESCRIPTION OF THE ERSKINE PROVISIONAL LIMB AND PEG-LEG.

A. *The Pelvic Elliptical Ring, i.e.,* the ring which fits the pelvis at a point where the thigh joins the trunk.

This is an elliptical ring constructed to fit the anatomical lines of the pelvis at parts where the weight of the body should fall—principally the ischium. The ring may be constructed of various materials, but English elm is one of the best woods for strength and lightness. It is cut from a solid piece of wood $1\frac{1}{2}$ inches thick. The rings are made in eight sizes to fit the various sizes of limbs. The ring must be very specially shaped to fit the contour of the pelvis so as to carry the weight of the body where it normally ought to be placed. The final shaping of the ring must be done by hand. The ring is checked round the under inside edge for $\frac{1}{2}$ inch in depth and $\frac{3}{16}$ inch in breadth—to receive the three-ply wood moveable bucket—and is also checked underneath to receive the supporting lathes. The ring must be fixed to the apparatus at a special angle. The outer part (trochanteric) must be 3 inches above the level of the inner part

(public). The upper side of the ring must be carefully rounded off and finished smooth with fine sandpaper, while the under side is left flat.

B. *The Compressible Bucket* is made of a single piece of three-ply wood $\frac{1}{8}$ inch thick and each ply of equal thickness. This must be first quality birch. The outline of the top must be so shaped as to conform with the proper angle of the ring, while the lower part is straight and when put into position should form a cylinder. The upper end of the overlap of the movable bucket is fastened with a rivet, while the lower is left free and made so as to be able to be contracted by means of straps. The inner edge of the bucket is thinned and the two surfaces slide one within the other so as to present a smooth surface internally.

For stability of construction the central knee block ought not to be more than 3 inches from bottom of bucket. The upper part of the bucket is fixed by screw nails screwed into the check on the under side of the ring, and the overlap is fixed in front with a copper rivet about an inch from the ring. Immediately above the rivet, the top of the bucket for about an inch and a half on either side of overlap is lowered about quarter of an inch so as to allow of free movement of overlap. The buckets are made in three lengths, measuring from perineum 6 inches, 8 inches and 10 inches, and one out size for amputations through knee joint in tall persons 12 inches.

C. *The Supporting Lathes*—4 or 5 in number—are for carrying the weight of the body from the pelvic ring to the centre block. These lathes are, in breadth, $1\frac{3}{8}$ inch and $\frac{1}{4}$ inch in thickness, and made of birch three-ply, first quality and Government tested. They may also be made of elm, properly seasoned, $1\frac{1}{8}$ inches by $5/16$ inch.

These supporting lathes are let into checks in pelvic ring or rivetted to bucket about an inch from outline of top and fitted tight under ring. Below they are firmly glued and screwed to the central block while resting on the projecting ledge.

Instead of wood, strips of hoop iron may be used as supports. They may be made stronger and do not add much to the weight.

D. *The Central Block (above level of knee)* is tapered from above, downwards and is made of willow or elm about $2\frac{1}{2}$ inches in thickness and 4 inches in diameter. A circular hole is bored in the centre of this block $1\frac{1}{2}$ inches in diameter to allow the pin leg to pass through and be adjusted to length. Two holes are bored, one toward the top and one toward the bottom of the block, to receive screws for fixing pin. These screw holes should not be opposite each other.

By a slight variation of the central block the compressible bucket of the provisional limb can be adapted to the lower portion of the *permanent limb*. A special shaped central block with a diameter of not less than four inches is turned, and the inside

of same is hollowed out to allow the knee block of the permanent limb to fit accurately into the cavity.

This central block may be turned in varying lengths to suit amputations at different levels.

The provisional compressible bucket may be thus interchanged with that of the permanent limb.

E. *The Adjustable Pin Leg* is made of home-grown ash. It fits the hole in the block and there is space between the bucket and the block for the adjustment of the pin which, when adjusted to height, is fixed by two screws, not placed opposite to each other.

F. *A Turned Saucer-shaped Support* for the end of the stump may be fitted at the top of the pin, which gives stability in movement. The stump when quite healed is allowed to rest lightly upon this support. The amount of pressure to be borne upon the end of the stump can be regulated by increasing proximally or withdrawing the pin.

G. *The Foot Block* is made of a turned piece of wood about 3 inches long and 3 inches in diameter, of conical or ogee shape, and the sole is covered with thick india rubber. A hole is bored in the block to receive the pin and fixed by means of two small screws at the top. If it be desired, a spring can be inserted into the foot block which would break the impact and modify the shock of walking. The movement of the spring is about three-eighths. The foot block can also be formed with an under convexity to give more natural movement in walking.

The Supply of Artificial Limbs: A New Industry.

Regarding the supply of artificial limbs for the thousands of men who have lost limbs in a great war, it was at once apparent that a peace loving country, estranged from war-practices and their consequences, which finds itself suddenly drawn into the vortex of a maelstrom of clashing nations, without proper preparation even for the prosecution of the war, would be without adequate resources to meet the requirements of the limbless. When we opened a Hospital for Limbless at Erskine, we were frankly told that it would be impossible for us in Scotland to get artificial limbs unless we employed alien limb-makers who were already at work in this country. Having unbounded confidence in the potentiality of our citizens and in the capacity, youth and vigour of our sons, I had no hesitancy in saying that even were we left without professional limb-makers, we should get in such a cause those who would make artificial limbs sufficient for the demand. We have men amongst us whose creative genius has made the Dreadnoughts possible and others who call into existence the lightest, fastest ships afloat and whose works are as dreams realised of what physics may create. To men such as these, the making of artificial limbs would prove a recreative diversion after days spent in the solution of recondite problems.

Such skilled men we called to our assistance, and they have given freely the most practical and valuable advice. A Limbs Committee was appointed for the making, standardisation and improvement of artificial limbs. It is comprised of expert physicists, engineers and surgeons who have together considered the various problems set before them—the one from the mechanical, the other from the anatomical and physiological, point of view—a happy combination which has already yielded excellent results, and which has been followed by the Government in the composition of the Advisory Committee for the Standardisation and Improvement of Artificial Limbs. The Erskine Limbs Committee has directed the production of limbs by wood carvers, pattern makers and skilled mechanics, in shipbuilding yards and engineer shops, and have been able to supply artificial limbs in sufficient quantity and quality to satisfy requirements. Thus, by employing home industry alone, a new industry was created and the knowledge of limb-making and the problems involved therein have been and are being diffused over an ever widening area.

Standardization of Artificial Limbs.

The special limbs supplied by our Committee have been standardised, the component parts being kept in stock with the exception of the bucket, which requires to be specially fitted. When the bucket is fitted, the other parts are assembled and quickly put together, and the limb is completed in a very short time. The standardisation ensures that any part which gets damaged can be quickly replaced and accurately fitted.

Artificial Arms.

Just a word about artificial arms. There is great difference in the utility between appliances for amputation below the elbow and for those above. With the former much good useful work can be done; so much so, that many men after some years' work at certain occupations are able to compete and hold their own by their use of their artificial arms with their more fortunate two-armed neighbours. (The Williams type of arm or the U.V.F. arm are practical and useful arms.) This cannot be said for artificial arms and appliances for amputation above the elbow, which diminish in utility the further up the arm the amputation is performed. The Advisory Committee on Artificial Limbs, of the Pensions Ministry, is at present collecting information as to how far the artificial limbs and appliances which have been already supplied from the various limbless hospitals have been of service to the men.

The problem of the utility of the limbless is not solved by supplying artificial limbs alone. They require to be taught the use of the artificial appliances provided, and they must be re-educated so that they may be able to employ their future to the utmost, not only for their own good but also for the good of the

community. To this end workshops must be provided both for curative and vocational purposes.

It is contended that preparatory cases and fitting cases ought to be treated in the same hospital at the same time. When this is done, it has the double advantage of getting the men ready sooner for their artificial limbs and giving the men more time for re-education under one system.

For the few who have suffered amputations of several members, two legs or two arms—or one of both, or three amputations—some places of residence near to workshops fitted with special appliances to aid them in their work is advocated.

LA STATIQUE DES MEMBRES INFÉRIEURS ARTIFICIELS DÉTERMINE LEUR VALEUR RÉELLE.

PAR DR. MARTIN.

La prothèse des membres s'efforce de restituer la fonction perdue du fait de l'amputation.

Les membres inférieurs ont une fonction de statique et de dynamique, c.à.d. qu'ils permettent la station et la marche. Celles-ci sont essentielles à la vie. Il est donc indispensable de les récupérer au maximum. Les éléments d'appréciation de la valeur des membres artificiels inférieurs généralement admis jusque maintenant sont: le poids, la mobilité, et l'adaptation des appareils. Ces éléments, à notre sens, n'ont d'importance que pour autant qu'ils servent la fonction du membre artificiel; ils sont d'ordre secondaire. La conformation statique et la dynamique des appareils de prothèse de la cuisse et de la jambe constituent, selon nous, les points les plus importants pour juger de la valeur fonctionnelle de ces derniers. Pour démontrer cette affirmation, nous aurons recours à l'observation directe et à l'expérimentation.

Nous pouvons déclarer que *la statique et la dynamique humaines ne sont pas identiques chez tous les individus; les appareils à statique et à dynamique uniformes et constantes sont donc, en principe, défectueux.*

L'observation nous a démontré les points suivants :

1°. *deux hommes ne possèdent jamais la même conformation anatomique des membres inférieurs.* Le fémur, oblique en bas et en dedans dans la position debout normale, forme avec le tibia vertical un angle obtus ouvert en dehors: c'est *l'angle de déclinaison du fémur*. L'ouverture de cet angle varie avec chaque sujet; elle oscille entre 174° et 164°, d'après nos observations.

Les deux os de la jambe ne constituent pas un axe vertical absolu, c.à.d. que la verticale passant par le milieu du genou (espace intercondylien), ne coupe pas le milieu de la ligne bi-malléolaire. Cette verticale tombe toujours en dehors du milieu de l'axe bi-malléolaire, et cela, d'une quantité variable avec chaque sujet. L'axe longitudinal du tibia, c.à.d. la ligne unissant le milieu de l'axe du genou au milieu de l'axe bi-malléolaire, fait, avec la verticale passant par le milieu du genou, un angle, que nous avons dénommé "*angle de cambrure de jambe.*" L'amplitude de cet angle varie avec chaque sujet. Elle oscille entre 2° et 8°, d'après nos observations. L'amplitude des angles de déclinaison et de cambrure varie d'une façon

générale avec la taille du sujet, son ampleur, son sexe, ses caractères ancestraux, &c.

L'angle de déviation externe du pied, c.à.d. l'angle que fait l'axe longitudinal du pied avec le plan médian du corps, varie avec chaque individu; ce fait est d'observation courante.

2°. *la marche dépend dela conformation anatomique des membres inférieurs.* Deux hommes ne possèdent donc jamais la même marche. L'allure générale de cette dernière, son rythme, sa cadence, sont des éléments fort variables. On ne peut pas comparer par l'analyse la marche décomposée cinématographiquement de deux individus différents. Ce fait est d'observation courante: il nous est arrivé à tous d'identifier un ami en entendant son pas marteler un terrain dur et sonore.

Nous observons aussi fréquemment des analogies de la marche chez des personnes composant la même famille. Le père lègue à ses enfants des analogies de structure anatomique des membres inférieurs, et du fait même, des ressemblances dans la marche. Enfin, la marche de l'homme diffère tant de celle de la femme, parce que la statique du premier est totalement différente de celle de la seconde. Celle-ci, en vue de la maternité, a un bassin large et évasé. L'angle de déclinaison du fémur et l'angle de cambrure de jambe sont très marqués. De ce fait, la statique est très spéciale, ce qui influe sur la cadence et le rythme de la marche. L'anatomie particulière des membres inférieurs crée cette statique et cette allure générale de la marche.

3°. *L'angle de déclinaison du fémur et l'angle de cambrure de la jambe sont des nécessités statiques et dynamiques de la marche d'un bipède.* Dans la station debout normale, le centre de gravité du corps passe par le milieu de la base d'appui, c.à.d. généralement la plan médian du corps.

Mais au cours de la marche, il n'en est plus de même. On peut dire, que la marche de l'homme est une marche unipède intermittente. Lors de la phase du simple appui, dans l'accomplissement d'un pas, le centre de gravité doit passer par le pied portant. C'est pour faciliter cet appui unipède que la ligne de gravité du corps à ce moment, c.à.d. la verticale passant par le milieu de l'axe du genou, est situé en dehors du milieu de la ligne bi-malléolaire de la jambe portante. Nos observations à ce sujet ne font que confirmer celles de Destot (de Lyon), qui par des recherches radiographiques et l'interprétation de la forme de l'astragale, est arrivé à cette conclusion: *l'axe du pilon de jambe passe en dehors du centre de figure de la face inférieure du tibia.* Nous reviendrons plus loin sur ce point.

4°. *La statique des membres inférieurs est normalement constituée de telle façon que la station debout se maintient avec le minimum de contractions musculaires, c.à.d. de fatigue.*

A cet effet plusieurs éléments interviennent.

(a) La ligne de gravité du corps, en station verticale, passe derrière l'axe qui unit les centres des deux articulations coxo-fémorales. (Poiries.)

Ainsi, sous la pesée du corps l'extension de ce dernier a une tendance à s'accroître. L'attitude en maintient passivement, ce mouvement étant bloqué par les puissants ligaments de Bertin.

(b) La disposition du genou en hyperextension, c.à.d. en genu recurvatum, fait tomber la ligne de gravité du corps devant l'axe du genou. Les ligaments croisés et les ligaments latéraux limitent passivement le mouvement d'extension.

Ces dispositions anatomiques assurent à l'homme un équilibre stable dans les déplacements du corps selon un plan sagittal.

(c) La stabilité de la station dans les déplacements du corps selon un plan frontal est réalisée par la rotation externe des axes tibio-tarsien et des pieds.

Si l'axe longitudinal du pied était parallèle au plan médian du corps, la base d'appui serait égale à celle de la plante du pied. L'équilibre serait très instable au cours de la marche, dans la phase du simple appui.

Par la rotation externe des pieds on double la base d'appui. En appui bipède, on peut la figurer par un trapèze à grande base antérieure. Dans la station unipède elle a la forme d'un rectangle sur un des grands côtés duquel on aurait accolé un triangle rectangle. La largeur de la base est presque doublée dans le plan frontal : c'est ce qui assure la stabilité de l'appui.

(d) La stabilité de l'équilibre de la station et de la marche est considérablement augmentée par l'entrecroisement en des axes du genou et des pieds. Quand les enfants montent des châteaux de Cartes, d'instinct, ils superposent celles-ci en les croisant. Les ouvriers qui empilent des briques ou des planches les disposent toujours en attitude croisée. La nature a mis en usage le même artifice. On a de la sorte une base d'appui figurée par une surface, c.à.d. beaucoup plus étendue que celle figurée par une ligne. La cuisse au cours des déplacements du tronc, se maintient mieux étendue sur la jambe, grâce, à ce dispositif naturel.

(e) Enfin le pied est à angle droit sur la jambe. Ainsi l'homme se trouve dans la meilleure situation pour utiliser le tonus du muscle triceps sural : la cuisse et le tronc sont ainsi retenus aisément lors d'une chute imminente en avant. (Poirier.) Si le pied était équin, la contraction des muscles du mollet devrait être plus accentuée pour produire le même résultat.

Un amputé de cuisse ou de jambe possède une stabilité amoindrie. C'est pourquoi la prothèse qui tend à rendre la fonction dans son intégralité, procurera un résultat d'autant plus parfait qu'elle se rapprochera des conformations normales, c.à.d. que sa statique et sa dynamique seront plus physiologiques.

La statique humaine est une fonction de la charpente osseuse. Elle résulte :

- 1°. De la disposition de l'ensemble des parties du corps.
- 2°. De la structure des membres inférieurs.

1°. Normalement le groupement des organes qui constituent le corps humain règle l'emplacement du centre de gravité et de la ligne de gravité du corps. On situe généralement cette dernière dans un plan médian passant par le milieu du canal rachidien en position anatomique.

Sous l'action de multiples causes (maladies du squelette—attitudes vicieuses au cours de l'évolution—accidents par traumatisme, etc.), ce dispositif normal peut être modifié. Il en est toujours ainsi chez les amputés du membre inférieur qui ont utilisé pendant des mois les béquilles (Fig. 2). La colonne vertébrale subit une déviation notable qui déplace entièrement la ligne de gravité du corps, troublant ainsi profondément la statique du sujet.

La malformation est structurale et non pas fonctionnelle. Elle résulte d'une modification de la charpente osseuse elle-même : la colonne vertébrale décrit une scoliose anormale de la région lombaire. Cette anomalie est fatale ; elle est une nécessité de la marche et de l'appui unipède.

On conçoit en effet que, chez un amputé de la cuisse, par exemple, l'appui ne peut se faire que sur le pied restant. La ligne de gravité du corps doit passer par ce pied pendant toute la durée de l'appui. Le centre de gravité du corps se situe nécessairement dans l'aire de la base de sustentation. Pour cela le pied se porte légèrement en dedans, et le corps se déplace fortement en dehors ; l'axe des épaules s'incline. La colonne vertébrale s'incurve à la région lombaire. Mais peu à peu, pour redresser l'axe des épaules, une déviation compensatrice se marque à la région dorsale. La structure anormale acquise se fixe ainsi avec le temps ; la statique est viciée à jamais. La hauteur du sujet a diminué dans une certaine mesure ; la longueur du tronc ne correspond plus exactement à celle du membre inférieur : on comprend que la marche d'un tel sujet est fort troublée. Elle en effet très caractéristique et très intéressante à analyser. Nous renvoyons nos lecteurs à notre monographie qui traite de la prothèse des membres inférieurs : ils y trouveront une analyse succincte de la marche décomposée ; ils pourront la compléter par l'observation attentive des films cinématographiques.

Le traitement de ces anomalies doit être prophylactique et non curatif : ce dernier serait illusoire. La suppression radicale de l'emploi des béquilles chez les amputés du membre inférieur doit être dogmatisé et généralisé. On remplace facilement et avantageusement ces instruments par la prothèse thérapeutique. Nous savons d'ailleurs que cette dernière est indispensable à la bonne formation des moignons d'amputation.

2°. La structure des membres inférieurs influe notablement sur la statique du sujet ; elle contribue à la créer et à la caractériser. Le fémur est en déclinaison sur le tibia ; les os de la jambe font avec la verticale un angle de cambrure ; les angles de déclinaison de la cuisse et de cambrure de jambe déterminent les caractéristiques de la station et de la marche.

Le but de cette disposition naturelle est de reporter la base d'appui près du plan médian du corps; celle-ci est une nécessité statique et dynamique de la marche d'un bipède, nous l'avons dit.

Dans l'exécution d'un pas on décrit deux phases: celle du double appui, celle du simple appui; la première est à un temps, la seconde est à deux temps. Elle se fait alternativement sur chaque pied.

Pendant la phase du simple appui, l'homme réalise, nous le savons, une station unipède: la ligne de gravité du corps passe en ce moment par le pied portant.

Le centre de gravité du corps est situé dans le plan médian du corps. Ce plan doit donc nécessairement, en simple appui, se trouver dans l'aire de la base de sustentation. Si celle-ci est proche de ce plan, le corps se déjettera peu en dehors pour réaliser ce déplacement. Il en sera tout autrement si la base d'appui est éloignée du plan médian du corps. C'est pourquoi normalement, chez les personnes anatomiquement parfaites la marche est aisée, élégante, et gracieuse; le balancement du corps est minime, le dandinement nul.

Certains sujets ont une démarche dandinante accentuée: on rencontre surtout cette dernière chez les femmes fortes et amples, chez lesquelles l'écartement des os iliaques est tellement accentué que malgré l'amplitude des angles de déclinaison et de cambrure de jambe, la base d'appui reste assez éloignée du plan médian du corps. Ce fait tient aussi à ce que l'adiposité des organes abdominaux abaisse la situation du centre de gravité. Ce dernier étant situé plus inférieurement, il faudra, au cours de la marche, déjeter plus considérablement le corps en dehors pour obtenir qu'il se place dans l'aire fixe de la base de sustentation; le schéma ci-contre fera mieux comprendre ce mécanisme. Chez ces personnes lourdes et larges le balancement des épaules est très accentué; il est bilatéral. Il en est de même chez la femme enceinte de plusieurs mois.

Un bi-amputé de cuisse muni de deux membres commerciaux ne peut réaliser que la marche très dandinante, parce que, du fait de la prothèse défectueuse la base d'appui est très éloignée du plan médian du corps; le dandinement est bilatéral. Il en est de même chez un bi-amputé de jambe, mais avec moins d'accentuation.

Chez un amputé d'une cuisse le dandinement est unilatéral; il se marque du côté amputé. Il est d'autant plus accentué que le membre artificiel est plus vertical, et que le sujet est plus grand et plus ample. Il est une nécessité due à la statique anormale de la prothèse classique. Nous l'avons aisément mis en relief par l'analyse cinématographique de la marche.

Nous avons expérimentalement démontré qu'il était le fait de la défectuosité de la statique des appareils. Nous avons pu supprimer ce balancement unilatéral des épaules chez un amputé bien appareillé au moyen d'une prothèse à statique physiologique.

Nous estimons que la statique des appareils de prothèse est tellement essentielle que nous nous efforçons de confectionner une prothèse thérapeutique à statique normale. Nos amputés se rendent parfaitement compte de la bonne ou de la mauvaise statique de leur pilon provisoire : des appareils bien construits leur donnent plus de satisfaction et d'aisance.

La statique retentit sur la dynamique. Celle-ci résulte de la mise en jeu du moignon et de l'appareil : elle est liée à l'action active des muscles et du mouvement passif des articulations naturelles et artificielles. Elle est sous la dépendance de l'adaptation du membre, de sa structure et de l'état du moignon.

L'état du moignon est déterminé par les traitements chirurgical et orthopédique.

L'adaptation de l'appareil au moignon est essentielle : c'est elle qui détermine en quelque sorte la commande du membre artificiel. Elle est naturellement la meilleure quand l'emboiture adhère intimement au moignon. Elle influe considérablement sur la dynamique du membre. Nous ne pouvons dans ce rapport traiter ce point.

La statique du membre artificiel lui-même contribue pour une grande part à déterminer sa dynamique. Pour bien saisir ce point, il est utile d'étudier et d'analyser les actions musculaires au cours de l'exécution d'un pas. Schématiquement, on peut se représenter le fémur actionné par quatre groupes musculaires : les fléchisseurs, les extenseurs, les abducteurs, et les adducteurs.

Les fléchisseurs c'est-à-dire le psoas-iliaque, sont en même temps adducteurs et un peu rotateurs en dehors. (Nous négligeons dans cette étude les muscles qui s'insèrent en dessous de la partie moyenne du fémur ; ils sont en effet sectionnés chez les amputés de cuisse.)

Les abducteurs c.à.d. le petit et le moyen fessiers, le pyramidal, les obturateurs, les jumeaux et le carré crural, sont fortement rotateurs en dehors.

Les extenseurs, c'est-à-dire surtout le grand fessier, sont très rotateurs en dehors.

Recherchons comment au cours de la marche se manifeste l'action de ces muscles. Normalement, en attitude de départ, la période du double appui, le fémur est en direction oblique en bas et en dedans. Cette direction est due à la forme du fémur, au dispositif articulaire et à l'action du tonus musculaire. Dès que s'exécute une phase du simple appui, le fémur de la jambe oscillante se fléchit. Le psoas-iliaque entre en jeu ; il fléchit la cuisse et il la porte en légère rotation externe. Cette attitude s'accroît au fur et à mesure que l'oscillation du membre se déroule jusqu'au moment de la flexion maximale de la cuisse. En ce moment la jambe oscillante est antérieure et elle va commencer son extension. Le fléchisseur se relâche progressivement et nous assistons au déroulement en sens inverse de la cuisse ; elle

s'étende, se porte en légère rotation interne. Cette évolution, que l'on peut observer sur un film cinématographique, est normale; elle résulte de l'action des muscles, qui eux sont sous la dépendance du sens de leur traction, c.à.d. de leurs insertions au squelette. Lors du déroulement de la cuisse en avant au moment où le pied antérieur retombe vers le sol, aucun muscle ne paraît entrer en jeu. La pesanteur nous semble être le seul élément actif; cette intervention est rendue possible grâce au relâchement des fléchisseurs. S'il en est ainsi, il serait préférable de pas faire des appareils de prothèse trop légers, car l'action de la pesanteur en serait amoindrie. Il y aurait lieu de rechercher expérimentalement le poids optimum des membres artificiels. Au moment où le fémur fait sa rotation externe, la tête fémorale se déroule dans la cavité cotyloïde, découvrant ainsi la face interne de la cuisse qui devient quelque peu antérieure. La forme même de l'épiphyse fémorale supérieure fait que ce mouvement de rotation externe s'accompagne d'un léger mouvement d'abduction; celle-ci est considérablement augmentée par la longueur du fémur: c'est pourquoi l'abduction est surtout marquée au genou. Dans la phase suivante, celle de la rotation interne, ce même mouvement se produit en sens inverse: le genou se reporte en adduction. Donc schématiquement et normalement, au cours de l'exécution d'un pas, le fémur du côté du membre oscillant décrit un mouvement de flexion, rotation externe et abduction, suivi d'un mouvement inverse et égal, c.à.d. extension, rotation interne et adduction.

On peut observer que l'évolution d'un membre artificiel physiologique est identique: la statique normale crée une dynamique normale.

Il n'en est plus de même quand l'amputé est muni d'un membre commercial: la statique vicieuse crée une dynamique anormale.

Nous savons que les membres commerciaux ont une statique anormale. Le docteur Hendrix, dans sa monographie "Les principes fondamentaux de la prothèse orthopédique du membre inférieur," en a bien décrit les caractères essentiels.

Nous retiendrons seulement ceci: l'axe longitudinal de la cuisse est dans le prolongement de l'axe longitudinal de la jambe: les angles de déclinaison et de cambrure de jambe n'existent pas. Le cuissard est vertical. Le moignon engainé dans ce dernier est nécessairement dans la verticalité. Or nous savons que la direction normale du fémur au repos est oblique en bas et en dedans, c.à.d. en adduction légère. Pour engainer le cuissard, le moignon se porte en abduction légère; à cet effet les abducteurs se contractent, avant la marche et procurent ainsi la position exigée.

Or les abducteurs, nous l'avons dit, sont fortement rotateurs en dehors; d'autre part la rotation externe, comme l'avons vu, s'accompagne d'une abduction très marquée au genou. Au repos le moignon est en abduction forcée et en rotation externe. Cette anomalie fonctionnelle des actions musculaires modifiera entièrement l'évolution du membre artificiel.

Reprenons l'évolution de la jambe oscillante lors de la phase du simple appui. La cuisse se fléchit : le psoas-iliaque entre en contraction ; les abducteurs, qui sont légèrement extenseurs, se relâchent. Dès lors le fémur est porté en haut ; le membre attiré par le psoas, se met en adduction ; ce dernier mouvement s'accompagne d'une rotation interne. Ces mouvements s'accroissent progressivement jusque la flexion maximale : la jambe oscillante est antérieure. Alors s'exécutent son déroulement et l'abaissement du pied vers le sol. Le psoas se relâche, les abducteurs se contractent, le moignon redevient vertical : le membre se met en extension, abduction, et rotation externe. Dans cette phase les abducteurs entrent en jeu parce que le cuissard est vertical, quand le pied prend appui au sol.

Donc schématiquement, l'évolution du membre artificiel commercial est inverse de celle du membre naturel la flexion de la cuisse s'accompagne de rotation interne et d'adduction ; son extension, de rotation externe et d'abduction. Cette anomalie est due uniquement au trouble provoqué par le jeu musculaire résultant d'une statique défectueuse. Des contractions musculaires interviennent mal à propos et en excès : c'est là une cause de fatigue et de mauvais rendement de la prothèse.

La simple observation d'un film cinématographique décomposant la marche d'un amputé démontre ce que nous affirmons ci dessus. On pourrait s'étendre davantage et envisager l'action des autres anomalies statiques sur la dynamique du membre artificiel. Mais nous devons nous limiter dans ce rapport. Nous pensons d'ailleurs en avoir dit assez pour avoir fait la preuve de l'affirmation suivante : *la statique des membres inférieurs artificiels détermine leur valeur réelle.*

Les notions reprises dans ce rapport sont d'ordre scientifique. On peut dire que le problème tout entier de la prothèse des membres est d'ordre scientifique : seule l'étude scientifique, basée sur l'observation rigoureuse des faits et sur l'expérimentation objective en donnera la solution. A l'ambulance de l'Océan c'est dans cet esprit que nous avons abordé et que nous continuons l'étude de cette question.

LES NOTIONS NOUVELLES SUR LE TRAITEMENT POST-OPERATOIRE ET L'APPAREILLAGE PRECOCE DES AMPUTES.

PAR le DR. MARCEL STASSEN, Directeur Médical de l'Institut Militaire Belge des Mutilés et Invalides de la Guerre, à Port-Villez.

Jusqu'en ces derniers temps, l'art chirurgical et l'art de la prothèse étaient deux entités nettement définies, et bien éloignés étaient les rapports qui existaient entre eux. Il n'y avait pas entre le chirurgien et le prothésiste de collaboration intime. Tout au plus, le chirurgien estimait-il, intéressant de connaître l'art de la prothèse, en vue de la place à assigner à la cicatrice lors de l'intervention opératoire. Ce n'était que quand son rôle était terminé, que quand la cicatrisation anatomique était obtenu, qu'il adressait son patient au prothésiste. La rééducation fonctionnelle des moignons en vue de l'utilisation de la prothèse ne retenait nullement son attention, c'était affaire au prothésiste de tirer parti de ce que le chirurgien avait bien voulu laisser, or, comme nous allons le voir, c'était une erreur.

La thérapeutique des amputés exige la collaboration du chirurgien et du médecin-prothésiste et pour être bon médecin prothésiste, il faut être un clinicien averti. La rééducation fonctionnelle, ou mieux l'utilisation fonctionnelle du moignon doit commencer le plus tôt possible, après l'amputation.

Au même titre que le traitement des fractures et des traumatismes articulaires, la thérapeutique des amputés est au premier chef, un problème anatomophysiologique. Tout en visant à la cicatrisation de la plaie opératoire, il faut dès le principe, c-à-d., dès le moment de l'intervention opératoire, s'efforcer de conserver aux segments du membre, un maximum de mobilité et de tonicité musculaire.

L'amputation n'est pas une lésion à effet local, elle exerce au contraire, une action néfaste sur la physiologie de tout le membre restant. La section des groupes musculaires et le déséquilibre qui s'en suit, la section des nerfs et des vaisseaux déterminent des troubles circulatoires tant artériels que veineux ou lymphatiques, troubles circulatoires qui ont un retentissement grave sur la bonne nutrition du membre entier et par conséquent sur ses moyens de défense.

Utilisation fonctionnelle et cicatrisation sont inséparables l'une de l'autre.

La chirurgie traumatique doit en finir avec cette notion du repos favorisant la cicatrisation et prévenant l'infection. Les résultats obtenus par la mobilisation immédiate dans le traitement

des fractures ; les résultats inespérés de la méthode Willems dans la thérapeutique des infections articulaires, la cicatrisation rapide des plaies torpides par la méthode " biokynétique," font bonne justice de cet aphorisme considéré jusqu'aujourd'hui comme une vérité intangible.

C'est la formule lapidaire de Lucas Championnière. " Le mouvement c'est la vie, qui doit dominer toute l'activité thérapeutique de la chirurgie traumatique." Le principe directeur de la consolidation anatomique préalable avec rétablissement ultérieur de la fonction, devrait être rayé des traités de thérapeutique chirurgicale traumatique pour être remplacé par celui bien plus logique de " l'utilisation fonctionnelle amenant par surcroît la consolidation anatomique."

Aussi bien, chez les amputés, il faut mobiliser les segments du moignon dès les premières heures qui suivent l'amputation. Bien plus les amputés doivent être appareillés le plus tôt possible après l'acte opératoire, et le plus tôt possible signifie dans les premiers jours, sans même attendre la cicatrisation complète de la plaie opératoire.

Il faut aux amputés une prothèse thérapeutique, précoce, voire même, hâtive, permettant l'utilisation fonctionnelle du moignon.

Le Médecin-prothésiste doit intervenir immédiatement après l'acte chirurgical, pour prendre, avec le chirurgien, la direction du traitement post-opératoire du moignon. Attendre la cicatrisation pour appareiller un moignon, c'est attendre le déséquilibre et l'atrophie musculaire, l'endolorissement et la raideur des articulations, c'est même retarder la cicatrisation de la plaie opératoire. Celle-ci sur un moignon muni d'une prothèse thérapeutique évolue au contraire vers la guérison, avec une rapidité extraordinaire. L'atrophie musculaire et les raideurs articulaires n'ont pas le temps de s'installer et la circulation se fait dans d'excellentes conditions. Les différents segments du membre restant s'assouplissent vite, leur volume diminue de plus en plus et bientôt le moignon tout entier atteint un état définitif, il peut alors recevoir une prothèse définitive.

Un autre bienfait de l'appareillage immédiat est le réconfort moral qu'il apporte aux amputés. Il leur rend la confiance dans l'avenir en diminuant, dès le principe, les inconvénients de leur infirmité : il prévient surtout chez les amputés du membre supérieur, cette résignation, ce scepticisme décevant contre lequel les prothésistes doivent souvent lutter, lorsqu'ils sont appelés à appareiller des manchots, amputés de longue date.

En réalité, entre le moment de l'amputation et celui de l'appareillage définitif, il s'écoule une période plus ou moins longue, au cours de laquelle l'amputé doit utiliser une prothèse simple, commode, facile à construire. Cette prothèse thérapeutique, à fournir dès les premiers jours qui suivent l'amputation, permet l'utilisation fonctionnelle du moignon, élément de première importance pour la cicatrisation de la plaie opératoire et l'évolution favorable du moignon vers son état définitif.

A côté de l'influence qu'il exerce sur le moral de l'amputé, l'appareillage immédiat, en conservant aux segments du moignon, une tonicité et une souplesse normales, assurera pour l'avenir, le meilleur rendement de la prothèse définitive. En prenant ces principes pour base, nous étudierons succinctement dans les pages qui vont suivre :—

Les types de prothèse thérapeutique :

- (a) pour amputés du Membre Inferieur ;
- (b) pour amputés du Membre Superieur.

A. La Prothèse Thérapeutique des Membres Inférieurs.

F. Martin, adjoint au Pr. Depage et Chef du service du centre belge d'appareillage de l'ambulance de l'Océan à La Panne, fut un des promoteurs de cette prothèse. Rejetant les conceptions qui avaient cours avant la guerre, au sujet des appareils provisoires ou d'attente qui, dans l'esprit des orthopédistes, étaient destinés à des moignons cicatrisés et permettaient aux amputés d'attendre un appareillage plus perfectionné F. Martin estime que la prothèse thérapeutique doit être conçue d'une façon plus complète.

Elle doit, écrit-il, achever le traitement chirurgical. Elle constitue au même titre que le massage et la mobilisation mécanique ou manuelle, un adjuvant primordial de l'évolution des moignons.

L'emploi judicieux de la prothèse thérapeutique abolit presque complètement l'usage néfaste des béquilles. Ces instruments, devraient être bannis de l'arsenal chirurgical ; car, indépendamment des accidents qu'ils peuvent causer (paralysie du plexus brachial, névrite, etc.) leur usage prolongé détermine dans la statique de l'homme des modifications profondes et presque irrémédiables.

Dalla Vedova, dans un intéressant article paru en août 1916, faisait prévoir tout le parti que l'on pouvait tirer d'un emploi plus étendu de la prothèse dite provisoire. Il signalait notamment les avantages que l'emploi précoce d'une prothèse simple, économique exerçait sur l'évolution des moignons d'amputation. Nous devons, disait-il, trouver une prothèse simple et aussi économique que possible, que l'amputé portera dès que le moignon sera cicatrisé et qu'il faudra même parfois appliquer avant que la cicatrisation soit obtenue.

D'après Putti, aucun traitement physio-thérapique ne peut rendre au moignon autant de nutrition, autant de souplesse que l'utilisation fonctionnelle hâtive, et dans le traitement des moignons l'appareillage précoce représente la physiothérapie la plus utile et la plus complète.

Mais pour être d'un bon rendement, un membre artificiel de traitement doit réunir quelques qualités essentielles que F. Martin fixe comme suit :

L'appareil s'applique sur un moignon récent, c.-à-d. toujours sensible, il devra donc donner un appui judicieusement réparti pour ménager la susceptibilité du moignon. Celui-ci, au début, change rapidement de forme et de volume. L'appareil suivra ses évolutions successives, il faudra le remplacer, afin qu'il s'adapte constamment aux modifications de forme et de volume du moignon. Le poids de l'appareil sera peu élevé, il ne dépassera pas deux kilos pour un pilon d'amputé de cuisse ou de jambe. Il faut donner la préférence aux appareils en plâtre qui sont supérieurs aux appareils construits en carton ou en toute autre matière.

Un des points essentiels du bon fonctionnement de ces appareils, est d'enlever le bout inférieur de l'emboiture, afin de dégager de toute pression, d'éviter tout frottement à l'extrémité et aux bords inférieurs du moignon.

Dans l'album que l'Institut de Port-Villez a déposé à l'Exposition, on peut voir plusieurs photographies de ces appareils de traitement en plâtre pour amputés du membre inférieur.

B. La Prothèse Thérapeutique des Membres Supérieurs.

A la suite d'une enquête que nous avons faite auprès de 147 amputés du Membre Supérieur, le Dr. Hendrix et moi, avons acquis la conviction que ces mutilés pouvaient aussi retirer le plus grand bénéfice d'un appareillage précoce. Plusieurs de ces amputés nous ont même déclaré qu'ils regrettaient de n'avoir pas été appareillés aussitôt que possible après l'amputation. Sans doute, les traitements physiothérapiques que leur moignon avait subi avant d'arriver à son état définitif, avaient eu une certaine efficacité au point de vue de leur rééducation fonctionnelle ; mais celle-ci aurait été plus complète encore si, au traitement physique, était venu s'adjoindre un appareillage précoce. Celui-ci les aurait empêché de faire abstraction du membre perdu. Il ne les aurait pas ensuite réduits, lors de l'appareillage définitif, à une grande dépense d'énergie morale, pour vaincre l'habitude prise, de se trouver assez complets dans la vie avec un bras de moins.

Le moral, le manque de confiance en l'avenir des amputés du Membre Supérieur, appareillés longtemps après l'amputation, est, en effet, un des plus grands obstacles, contre lesquels doivent lutter la bonne volonté des rééducateurs.

L'homme qui a perdu un bras se résigne, avec un certain sentiment de fatalisme, à sa mutilation. Quand il a rééduqué sa main valide, pour suppléer au membre perdu, l'amputé, plus particulièrement l'ouvrier amputé, ne cherche pas à améliorer sa situation. Une vague conscience d'être désormais une moindre valeur professionnelle fait naître chez lui un état d'esprit spécial. Convaincu que les métiers manuels lui seront désormais fermés, il accepte avec scepticisme les conseils de ceux qui veulent

l'aiguiller vers l'atelier. Si on lui propose une prothèse de travail, qui lui rendra possible l'exécution de certains travaux, il est bien rare qu'il ne réponde pas par un refus. Il est ébloui par le mirage de la "petite place" (gardien de musée, gardien de square, garde-barrière, etc.) qu'il attend de l'Etat! Bien plus, souvent il refuse même d'utiliser le bras automatique. Il prétexte que cet appareil est plus encombrant qu'utile. S'il l'accepte, c'est pour le reléguer au fond d'une armoire, après quelques jours d'essai.

La prothèse thérapeutique, l'appareillage précoce et la rééducation fonctionnelle par le travail, sont les meilleurs moyens de prévenir chez ces amputés le développement de ces sentiments de résignation et de désespérance en l'avenir.

Le Dr. Martin de l'Ambulance de l'Océan, à La Panne est arrivé, lui aussi, aux mêmes conclusions que nous.

Les amputés du Membre Supérieur sont, dit-il, comme les amputés du Membre Inférieur, susceptibles de retirer le plus grand profit de la prothèse thérapeutique rapidement appliquée.

Aussi bien, la Commission d'Etude de la prothèse du Membre Supérieur qui fut instituée par le Gouvernement Belge par dépêche ministérielle en date du 13-1-18 et qui, sous la Présidence du Medecin Principal de 1^e classe Maistriau, était composée de Mr. le Prof. Tuffier, de Paris, Mr. Le Dr. Ducroquet, de Paris, de Mr. Breton, orthopédiste à Paris, du Médecin de régiment de 2^e classe Waffelaert, des Médecins de bataillon de réserve Stassen et Hendrix, des Médecins-adjoints Martin et Delrez, a-t-elle admis, à l'unanimité, les principes suivants relatifs à l'appareillage précoce de ses amputés du Membre Supérieur.

1. Il est indispensable d'appareiller les amputés du membre supérieur, dès les premiers jours après l'amputation.

2. L'appareil provisoire (prothèse thérapeutique) doit être aussi simple, aussi léger que possible et facilement renouvelable.

Il se composera :

(1^o) d'une emboiture rigoureusement adaptée au moignon ;

(2^o) de moyens d'attaches simples.

Emboiture et moyens d'attaches doivent être réalisés :

(a) en vue du maintien de l'orientation normale des axes longitudinaux et articulaires du membre ;

(b) du maintien de l'intégrité normale du jeu articulaire et du fonctionnement des groupes musculaires ;

(3^o) d'une terminaison sur laquelle pourront s'adapter une série d'instruments pour la vie de relation et d'outils pour le travail thérapeutique.

3. Programme des exercices à exécuter.

Outre les mouvements nécessaires à la vie de relation, l'amputé devra exécuter avec le prothèse provisoire, sous la surveillance du médecin-prothésiste, un programme de mouvements ou de gestes ouvriers, simples, gradués, ayant pour but de mettre en oeuvre le jeu des muscles et des articulations des segments du membre restant.

Ce programme pourrait, p.ex. : se résumer dans la série des gestes ouvriers suivants :

1^{er} *exercice* : limer avec une lime demi-douce et courte pendant une demi-heure environ le premier jour.

2^e *exercice* : limer avec une lime dure, lourde et longue, pendant une heure environ, le second jour.

3^e *exercice* : scier un bloc de bois ou un morceau de fer pendant une heure environ, les jours suivants.

4^e *exercice* : à partir des 5^e ou 6^e jour, exercices variés des jours précédents et, en plus, débiter à la gouge et au maillet des blocs de bois, pendant 3, 4 ou 5 heures environ.

4. L'amputé devra être dirigé sur le centre d'appareillage, immédiatement après la cicatrisation de ses blessures.

5. La prothèse thérapeutique qui suit les évolutions du moignon est la seule prothèse provisoire qu'il y ait lieu de fournir aux amputés du M.S. avant de leur donner une prothèse définitive.

Il y a lieu de laisser au chirurgien et au Médecin-prothésiste le choix de la matière à employer pour la confection des divers modèles de la prothèse provisoire.

Les appareils en plâtre que le Dr. Martin, à l'Ambulance de l'Océan à La Panne, le Dr. Hendrix, au Centre d'appareillage de l'Armée Belge, à Bonsecours, ont fait construire, sont conformes à ces principes.

Dans l'album qui est déposé à l'Exposition, nous donnons également des photographies d'appareils "de traitement" en plâtre, pour amputés du Membre Supérieur. Ces appareils ont été fabriqués à Port-Ville et leurs constructeurs se sont, eux aussi, efforcés de répondre aux desideratas exprimés par la Commission d'étude de la Prothèse du Membre Supérieur, instituée par le Gouvernement Belge.

SUMMARY OF THE REPORT "ON THE PRESENT CONDITIONS OF PROTHESIS IN ITALY" TO THE INTER-ALLIED CONFERENCE IN LONDON ON ASSISTANCE TO DISABLED SOLDIERS AND SAILORS.

For PROFESSOR RICCARDO DALLA VEDOVA, Director of the Orthopædical Traumatological Clinique of the Royal University at Rome.

The intensification of the construction of prothesis that has manifested itself in Italy as a result of the war, can be thoroughly examined only by means of a detailed, analytical study. This is not possible so far as this brief summary is in question, by reason of the limited amount of space.

I will therefore content myself by setting forth the extraordinary unexpected need for providing with artificial limbs (anatomical and functional) a great number of youths who have sacrificed their limbs in the defence of Right against Might, which has increased the importance of this study for the perfecting of prothesis and has caused it to be recognised as the means for giving back to the disabled man his social autonomy.

The efficacious initiative of Her Majesty the Queen has blended with the generous co-operation of the citizens of all classes, under the moderating protection of the Government, to assist this good work. And side by side with the workshops for artificial limbs that already existed before the war in the two centres for university or higher orthopædic studies (of Bologna and of Milan), orthopædic workshops have arisen in nearly all the principal professional training schools for disabled soldiers and sailors (Milan, Florence, Rome, Turin, Palermo, Pescia, Naples, Venice, Genoa). The efforts of all of them have been united to those of the workshops belonging to private firms, for the more rapid perfecting of the production of artificial limbs.

The first national competitive exhibition of artificial limbs, held at Bologna in March, 1917, brought the results of this activity to the attention of the public and offered a foundation for the laws and regulations that have been enacted for its guidance.

The general idea that has characterised this movement has been the democratising of artificial limbs. We shall not be able to differentiate in our war prothesis, a prothesis of luxury, or the rich man's prothesis, from the poor man's prothesis, for the one pre-occupation that has dominated our choice has been that of providing our brave disabled men with means that would assure

them the most complete and perfect functional and morphological compensation for their disablement.

As the principal condition of success consists in the artificial limb fitting exactly the disabled stump, *the morphological individualisation of prothesis* was accepted as being the fundamental rule for its construction, and this not only from the point of view of the *cosmesis*, but especially with regard to the success in the research of the most opportune and adequate support.

Both the shape and the size of the disabled limb are subject for a long period to modifications, even after the anatomical lesions have healed, and this is caused by trauma or its consequences. These morphological modifications are the result of the anatomical condition of the limb, and, more especially, of the organs remaining in it; but, for a cause that can certainly not be set aside, they are the result of the functional stimuli that are practised, adequate to the new conditions of the limb.

And for this reason the evolutions of these transformations are notably influenced, both as to duration and modality, by the precocious use of the stump and artificial limb. This precocious use reacts again on the general physical condition and on the psychic adaptment of the disabled men.

The problem of the precocious application of artificial limbs to stumps still undergoing the phenomena of settling down could have been solved in two ways: either by the construction of apparatus in such a way as would allow for the progressive adaptation to the morphological modifications of the limb, or by the construction of *provisional* apparatus to be used during the period of settling down, and their substitution by *definitive* apparatus, once the complete consolidation of the limb had taken place.

The first solution, although simpler and less expensive, was justly considered as being less useful in its general application; it was accepted only for a few functional protheses and for a few anatomical protheses of the superior limbs. But it was judged to be less adapted to the prothesis of the lower limb, as being the one that uses apparatus of a complicated construction the result of components of multiple and heterogeneous ingredients, that do not offer a morphological individualisation that is sufficiently stable and proportionate to the very grave static and dynamic exigencies. So the other solution was chosen instead: that is, to provide each disabled man with a provisional prothesis and a definite prothesis. At the same time, it was decided that for the disablement having to undergo a longer period of settling down the provisional apparatus shall be of two types: one a provisional hospital prothesis, and one a transitory prothesis for temporary use, but which will represent, for the disabled man, the apparatus in reserve, even when he has been provided with the definite prothesis.

The requirement that the prothesis shall be of as light a weight as possible has been appreciated to the full as much for the prothesis of the superior members as for the lower limbs. But it

has been considered as an essential requirement only for functional prothesis and for anatomical prothesis of the thoracic member; this, because they bring their weight to bear constantly on the member or on the body of the disabled man. Whilst, for the anatomical prothesis of the pelvis member, which leans its weight periodically on the ground and having the function of offering an unshapable support to the burden of the weight of the body, the requirement of lightness was not considered as a principal coefficient in the question of choice. All the more so that cinematic dispositions can lighten the weight carried by the stump during the period of oscillation, and that the greater the distance of the individual's centre of gravity from the ground, the more it inclines towards the healthy side, so the greater the difference between the weight of the prothesis and that of the amputated limb, the higher will be the centre of gravity of the prothesis.

For the amputation of the lower limb, the type of prothesis which has been used the most, and enjoys the more unanimous approval, has been the mechanical limb, a rigid funnel with a basic support, as offering the best guarantee regarding static results and assuring the most surrender to dynamic effects.

The definite wooden prothesis has, up to now, enjoyed the absolute preference for hip amputations. At present, however, the wooden prothesis for amputations above the knee is giving way to the metallic funnel of more recent innovation.

This type has been especially studied in the workshops of Turin, Florence and Palermo; it has been chosen because it unites to the rigid support at the base of the limb the lateral and soft support of a leathern pad, adaptable to the stump, thus utilising the lateral movement more efficaciously than could be done by the continuously rigid prothesis: they also allow for the simultaneous providing of transitory and definite apparatus.

Definite prothesis in wood are exclusively provided for leg amputations, and, being morphologically individualisable because of their simplicity and robustness (on a stump that has completely settled down), they have given excellent results.

The workshops at Bologna have furthered most appreciably these constructions, not only on account of the great number of apparatus supplied by them, but also because of the interesting experimental studies that have been made there on this subject; the workshops of Rome, also, as well as several less important ones, have most efficaciously increased this construction.

The characteristics of the wooden prothesis have caused it to become more acceptable in comparison to the lighter fibrous ones; the construction of the latter in a few workshops (Milan) has been perfected in a manner worthy of all consideration.

For amputations of thoracic limbs, the type that has been chosen is the prothesis of an adaptable funnel in leather, provided with metallic guards.

The greatest care has been taken to create for the prothesis of the superior member supports that were specially arranged for their morphological individualisation to the stump: by studying the tools that would give the best workable results (working member) and finally by studying the cinematising (mechanical or surgical) of the apparatus and of the stump. These investigations have revealed the joint importance of the morphological individualisation of the funnel and of the functional individualisation of the prothesis. This, however, pre-supposes the morphological and energetic valuation of the stump, and yet it cannot make any deductions from the intellectual attitude of the patient.

Others will report to the Conference on the subject of the working prothesis and of the cinematic prothesis.

I cannot, however, neglect to mention the new orientation that is being given to the construction of prothesis for the superior member, with the results of reducing to a minimum or even doing away with the awkward appliances for support and for anchorage (waistcoats, shoulder straps, bandoliers, &c.), using instead the properties of the muscular centres as a means of support. The elasticity and the contraction of the muscles have been used as a support for the prothesis of the ingenious "estetizzabile" working member that has been created in the national workshops at Milan. The muscular hypertrophy, brought about by the opportune strengthening with a rigid bracelet, thus transforming in so many digastrics the stump's residual muscles, has found an anchorage for the prothesis of the superior member in the furrow between the two enlarged muscular lines.

I am unable to express a definite opinion as to the possibility of there being a greater use made of such a system of morphological adaptation of the stump with its own structure obtained through the functional activation of the muscular components of the stump. But I hold that this system ought to be called to the attention of this Assembly as much because, by activating the energetic residua of the stump to the point of hypertrophy, it prepares it for possible secondary cinematic valorisations; as also, and especially, because it illustrates the reciprocity of the morphological relations between the stump and the prothesis (the prothesis must be morphologically individualised to the stump, but the stump can individualise itself to the shape of the prothesis by means of the function).

This principle may allow for the perfecting of the actual morphological individualisation of the prothesis to the stump in the most complex, but equally complete, functional individualisation of the prothesis to the holder. I believe that this functional individualisation is destined to represent the most important factor of his social autonomy.

THEORY ON THE VITALISING OF THE PROTHESIS.

BY PROF. GIULIANO VANGHETTI.

Orthopædic surgery is the static, dynamic and cinematic study of the actions of standing, of locomotion and of grasping ; but in actual practice, *cinematic surgery* consists in all kinds of cinematic plasticity for cinematic prothesis.

Cinematic prothesis or *cineprothesis* consists in utilising all the remaining or restored articulations in whatever part of the body they may be situated, whatever their attachments may be, and at whatever distance they may be from the mutilated parts, in order to reproduce other articulations that are lacking, and that are held to be of greater utility than those actually remaining.

Plastic cinematic or *cineplastic* is that branch of orthopædic surgery that undertakes the treatment, with or without the letting of blood, of muscular masses anatomically mutilated, or the artificial utilisation of others that anatomically are intact, always with the aim of conferring voluntary and direct articulation to the prothesis (*vitalising of the prothesis*).

Each moving entity so obtained is called *plastic motor*, and naturally it must be provided with an *organic* or *somatic* attachment that unites it to another *inorganic* or *prothetic* attachment that is destined to communicate the movement to the prothesis.

The fundamental types that can be utilised for the more or less easy attachment of the numerous varieties of motors are, according to the shape, the loop, the club and the loop-club.

The *club* motor consists in a thickening of any kind, and obtained in whatever manner, of the extremities of muscles and tendons, above which (at the neck of the club, the somatic attachment) can be applied a noose, a ring, &c. (prothetic attachment), so as to bring traction to bear on the prothesis.

The *loop* motor consists in the natural or artificial gathering together of the muscular or aponeurotic tendons, allowing a space (opening of the loop, tunnel, channel, somatic attachment) through which either a noose, a hook, a button, &c., can be passed (prothetic attachment).

The somatic attachment can also serve as the sole support of the prothesis.

Whenever the stump has a plastic stump only, we then have the cinematic mechanico-surgical prosthesis (*surgical cineprosthesis*).

Should there be only some mechanical transformation of the residuum of natural movements, we have the purely physio-mechanical prosthesis (*mechanical cineprosthesis*).

If on the same prosthetic mechanism there is a plastic motor and a mechanical transformation, we have the mixed cinematic prosthesis (mixed cineprosthesis).

In all that regards the mechanical workers, the surgical, mechanical or mixed cineprosthesis ought to be considered separately (*laboratory cineprosthesis*).

The term cinematisation was originally used for all bloody or bloodless cineplastic (*surgical cinematisation*): it was then also used for the simple application of the cinematic prosthesis (*prosthetic cinematisation*); and again for the active and precocious mobilising of the muscles connected with a cinematic plastic (*postoperative cinematisation*).

If the somatic attachment is made in the first instance—that is to say, contemporaneously with the primitive surgical trauma, or in continuation of the latter, it is *primary* (or firstly).

If the best conditions for the construction of a somatic attachment in the second instance, at no matter what lapse of months and years from the first one, can only be prepared during the said surgical trauma, it is *secondary*.

When the somatic attachment is moulded on to any kind of stump that has not been cineplastically prepared, but is the result of an ordinary amputation already advanced, it is *tertiary*.

Consequently, we must admit three different kinds of amputations with regard to cineprosthesis:—

- (1) *Cinematic amputation*, equivalent to a primary cinematisation.
- (2) *Hypo-cinematic amputation*, or transitory to a secondary cinematisation.
- (3) *A cinematic amputation*, or ordinary, capable only of tertiary cinematisation.

The principle of cinematisation is the following:—

In an actual or progressive amputation or disarticulation, the tendon or muscle for which the necessary physiological protection is provided (spare cuticle, vessels, nerves, &c.) can generally be utilised for the cinematic prosthesis, provided that an attachment can be formed with it under the same conditions of protection.

Plastic motors are unimotors and plurimotors, according to *function*.

The *unimotor*, or simple motor (unique, double, triple, &c.), is the one that by itself alone—that is to say, without any mechanical or other aid—is capable of giving contraction in an only direction, and therefore one single prothetic movement automatically antagonistic.

The *plurimotor* (bi-motor, tri-motor, &c.) is the one that is capable of two or more contractions in different directions, as, for example, the bi-motor or alternator, which, with only one somatic and prothetic attachment, gives two contrary movements to the prothesis.

The respective principle of oscillation may be formulated as follows :—

In the case of two muscles that could have reciprocal antagonistic action, which are connected by a running loop or any other support, a double oscillating motion can be given to the prothesis by means of only one attachment.

In accordance with the *position*, the motors can be terminal, lateral, super-segmental, &c., bearing in mind that these last-named must be those that are constructed apart from the mutilated segment, and are definitely residuary.

In accordance with the *fitness*, the motors are *firstly*, *secondary*, or *tertiary*, similar to the cinematisation from which they spring.

For the treatment of the *secondary*, or *post-operative*, *muscular retraction*, there are various methods :—

- (1) The *free method*, which does not take it into consideration in the least ;
- (2) the *internal method*, which counteracts the retraction by supporting the motor on a support inside the stump ;
- (3) the *laqueal method* (the laqueum-noose), that practises the tying of the motors, afterwards providing an external support for the nooses by attachment to the ferule, pulley, &c. ;
- (4) the *adhesive method*, based on the employment of adhesive materials placed on the outside of the stump so as to cause either ordinary or elastic traction ;
- (5) the *mechanical method*, which seizes the motor stump on the outside, pressing upon it without endangering its recovery ;
- (6) the *mixed methods*, which can be obtained through a combination of those mentioned above.

What has been said up to this point suffices to make it clear that it is not one system alone, as many have believed, and still believe ; but an unlimited series of systems that vary according to the member, the segment, the conditions, the individual, the surroundings and many other circumstances ; and it may also be understood how, on the whole, the surgical views on this question form a real doctrine apart, called *the theory of plastic motors*.

It will be noted that, for the sake of brevity, we have not mentioned the *principle of joining together*, which follows that of oscillation, but that has not yet been favoured by clinical elements. Clinical data are not lacking for giving ample proof of the justice of the theory, and to try for the solution of other important problems, such as the single loop oscillating amongst muscular paunches, the single club oscillating in either a bloody or bloodless manner, the systematic cinematising of conical stumps, the formation of pseudo-wrists with motive functions, the construction of directly prensible motors, the phalanxing of the second and fifth metacarpus, and others similar.

Both cineplastic and cineprothesis aim at obtaining the maximum self-aid from the mutilated patient, compatible with the degree of mutilation.

The mechanical cineprothesis, that is equivalent to automatic prothesis, indeed is pseudo-automatic, is of the greatest utility in many cases, but it also has many drawbacks; therefore, as far as is possible, it is best to avoid using it in conjunction with the plastic motor.

The ideal cineprothetic may be summarised in the following principle of surgical cineprothesis :—

The co-operation of the plastic and of the prothesis, both cinematic—without the mechanical usurpation of residual functions—is both useful and necessary for the maximum approximation of the prothetic members to the natural ones, both superior and lower—with the maximum of simplicity and the minimum of expense.

In the laboratory cineprothesis, in order to obtain the maximum *autarchia*, every effort must be made to get rid of all anthropomorphical maxims that unconsciously lead to continual errors, and to follow instead other mechanical ones that harmonise better with the theories of Taylor's School.

The fundamental mistakes of the ordinary systems for the clutch and release of implements can be avoided by keeping to the following principle of laboratory prothesis :—

Given the case of a serious mutilation, an automatic and elastic clutch—to be eventually strengthened by subsidiary closing with screws, &c., without the intervention of any hand—will bring about the maximum utilisation of the patient, with the maximum approach to the normal, compatible with the existence of the mutilation.

By getting rid of anthropomorphical maxims, also with regard to the so-called *ultra-mutilated*, it would appear possible to make a man who has lost his four limbs independent of the meal feeder, leaving in complete liberty the movements of the head.

A last problem that deals exclusively with the laboratory cineprothesis, besides the various mutilated, is that of the *work of the wounded and broken in practice and of the cripples*, also not because of the war.

During the past twenty years, and more especially during the last two years, there has appeared, on the subject of cinematic plastic, a vast amount of literature that can serve as a fairly good guide. Anatomy has added a valuable contribution for the superior member, dividing it no longer in thirds and fourths, but in unequal portions called *zones of capacity*—that is to say, of capacity of cinematizing. Even physiology has busied itself with the plastic motor. The strength of the latter has been calculated as oscillating between 10 and 80 kg/cm. for the superior member alone.

As a rule, practice has shown that, over and above the difficulties connected with the sepsis, the teguments, the cineprosthesis, with the psychology of the patient, there are others that cannot be easily described.

Thus, in a big centre, it may be impossible to construct even one plastic motor; and in another much smaller centre one may come upon an over-abundance of spontaneous offers. Everywhere, however, a first success is necessary and sufficient to create the demand.

We already have a few sections of cineplastic surgery; but, from a logical and practical view-point, there ought to be instituted special sections for selection, and others reserved for the real surgical treatment, absolutely complete on the surgical side, both mechanically and scientifically, and in no way exposed to the danger of evacuation.

The evacuation of patients who have been prepared for cinematizing, so as to send them to ordinary sections, is always equivalent to the loss of all the trouble and labour, and often re-amputation has to follow.

Possibly it would be expedient to issue instructions with regard to this to all the orthopædical military surgeons.

RESTAURATION FONCTIONNELLE PAR LE TRAVAIL PRECOCE DES BLESSES.

Par Dr. LOUIS DEBREZ.

Sous l'influence de causes diverses, notamment de la législation sociale rendant obligatoire la réparation des dommages causés par les accidents du travail, nous avons assisté, pendant les années qui ont précédé la guerre, aux efforts tentés dans le but de récupérer rapidement la valeur fonctionnelle totale des blessés. Les principes de Lucas Championnière sur la mobilisation précoce trouvaient des adhérents chaque jour plus nombreux; la doctrine de la réparation physiologique, fonctionnelle, prenait une place de plus en plus importante à été côté de la réparation anatomique qui avait été trop longtemps l'unique souci du chirurgien.

Nous connaissions déjà les beaux résultats de la mobilisation précoce des fractures de clavicule, des fractures du poignet, des contusions musculaires, des épanchements et des fractures intra-articulaires. Par ailleurs on ne voyait plus guère de fractures des os longs vouées à une immobilisation complète et sévère jusqu'au delà de la consolidation plus que certaine; on commençait à se soucier des fonctions des muscles et des articulations.

Pendant toute la première période de la guerre, ces principes restèrent lettre morte; non pas qu'ils fussent tombés complètement dans l'oubli, mais la nature et surtout l'évolution des plaies de guerre ne permettait pas de les appliquer. Toutes ou presque toutes les plaies de guerre, du moins les plaies par projectile d'artillerie, se compliquaient d'infection souvent grave, si bien que le premier et presque l'unique souci légitime du chirurgien était de combattre les complications septiques. Au mal terrible des gangrènes, des infections septiques graves, on ne tarda pas à trouver des remèdes thérapeutiques d'abord, préventifs ensuite; progressivement la prophylaxie de l'infection des plaies passa au premier plan des préoccupations du chirurgien. C'est la période des vastes débridements qui succède à celle de l'insuffisance du débridement.

Mais la seule vue des grands délabrements fait naître naturellement le désir de les réparer. De là naissent ou plutôt renaissent d'abord la pratique de la suture secondaire et ensuite les différentes méthodes de stérilisation des plaies par les moyens chimiques.

Jusque là point de place pour la restauration fonctionnelle précoce; toujours pour des raisons vitales, elle reste inappliquée et presque inapplicable. Seule la restauration tardive est possible, mais souvent précaire, parfois inefficace.

Cependant le traitement des plaies de guerre continue son évolution et affirme ses progrès incessants : la suture immédiate des plaies articulaires, pratiquée couramment déjà en 1916, se généralise rapidement, puis bientôt après la suture primitive retardée et la suture immédiate des plaies des parties molles et même des fractures des os longs.

Le traitement prophylactique méthodique a éliminé dans une large mesure les complications infectieuses ; grâce aux progrès gigantesques réalisés dans le traitement chirurgical, grâce à la fermeture des plaies, le terrain est redevenu propice à l'application des méthodes de restauration fonctionnelle précoce.

La restauration fonctionnelle est le complément indispensable du traitement des blessures ; elle fait partie des soins au même titre que la réparation anatomique ou anatomo-chirurgicale.

Mais elle ne doit pas s'en tenir aux pratiques un peu trop classiques du massage ou de la mécanothérapie et surtout elle ne doit pas succéder au traitement chirurgical proprement-dit, mais elle doit accompagner ceui-lui-ci.

Parfois en temps de paix, souvent pendant la guerre, nous avons vu des plaies superficielles, insignifiantes de la main ou des doigts occasionner des troubles fonctionnels de l'avant-bras, du bras et même de l'épaule, tout-à-fait disproportionnés à la gravité de la lésion anatomique ; des blessés atteints de contusion banals ou de simple égratignure de la main présentent, à l'arrivée à l'hôpital, de la contracture des muscles fléchisseurs des doigts et de la main ; l'extrémité est froide, cyanosée, la sensibilité est exagérée, la motilité active partiellement abolie. L'état de contracture ne persiste souvent que deux ou trois jours ; il est suivi bien tôt d'une hypotonie très marquée et d'atrophie musculaire à évolution rapide, qui frappe tous les muscles de l'extrémité, y compris ceux du bras et de l'épaule. Abandonnés à leur évolution naturelle, ces troubles peuvent persister longtemps et s'accroître. Si au contraire on s'attache de bonne heure à les combattre, on parvient à les enrayer assez facilement ; le facteur décisif est l'intervention des mouvements volontaires ; par la persuasion le médecin arrive à faire exécuter à ces blessés des mouvements actifs, très simples d'abord, puis de plus en plus compliqués ; ces mouvements doivent être actifs, répétés fréquemment, on pourrait dire constamment, sans repos. Alors l'hypotonie musculaire disparaît et l'atrophie s'arrête et régresse bientôt.

Que se passe-t-il, au point de vue physiologique, chez ces blessés ? Pourquoi une blessure minime a-t-elle sur le tonus musculaire une répercussion aussi profonde, même sur des segments du membre très éloignés ?

Il n'existe pas encore à l'heure actuelle de conception bien établie de la physiologie du tonus musculaire. Dans des travaux datant de quelques années avant la guerre, Van Gehuchten considérait le tonus musculaire comme l'expression du "tonus nerveux" des cellules motrices de la corne antérieure de la

moëlle; ce tonus nerveux lui-même est la résultante d'influx de sens divers, venus de différentes directions, qui se combattent ou se contrarient. Ces influx sont, les uns excitateurs, les autres inhibiteurs: parmi les premiers figurent les excitations périphériques amenées par les voies centripètes, les influx nerveux volontaires (voies motrices des cordons latéraux); parmi les facteurs d'inhibition figure entre autres la voie cortico-ponto-cérébelleuse (indépendante de la voie motrice). Il est très probable que le système nerveux sympathique (extra et intra médullaire) joue également un rôle important, mais il n'est pas déterminé. (Voir à ce sujet, Pieron: *Mécanisme physiologique du tonus musculaire*, etc., Presse médicale, 18/2/18.) Quoi qu'il en soit, la théorie de Van Gehuchten nous permet de saisir partiellement du moins, le mécanisme physiologique du tonus musculaire. Une lésion périphérique détermine, par la voie centripète, des modifications du tonus nerveux de la cellule motrice tantôt dans un sens (contracture), tantôt dans l'autre (hypotonie), ou successivement dans l'un et l'autre sens, ou du moins ces modifications nous apparaissent comme telles. Il est probable, en effet, qu'elles se produisent toujours dans le même sens, mais que les détails et la modalité nous en échappent partiellement.

Ces modifications primitives sont d'ordre réflexe; elles échappent complètement à la volonté du sujet; mais nous pouvons intervenir pour rétablir l'équilibre rompu, entr'autres par la voie de l'innervation volontaire; il n'est pas démontré que les mouvements volontaires aient sur le tonus nerveux et musculaire une influence permanente, c.à.d. une influence qui persiste en dehors des périodes de contraction volontaire. Mais leur influence sur l'atrophie musculaire est certaine, soit qu'ils l'empêchent complètement ou qu'ils la combattent.

Empêcher ou combattre l'atrophie musculaire n'est d'ailleurs, à notre avis, qu'un avantage d'ordre éloigné, que vient par surcroît; l'avantage essentiel, primordial de la mobilisation active précoce est le rétablissement de l'équilibre du tonus nerveux. Reprenons l'exemple cité plus du blessé qui, pour une lésion minime des parties molles de la main, a des troubles profonds des organes moteurs de tout le membre supérieur; lorsqu'on l'invite à exécuter des mouvements actifs, il en est presque totalement incapable, bien que ses muscles n'aient encore subi nul dommage réel. Ce qui l'empêche de mouvoir les doigts, la main, c'est son impuissance à "lancer l'influx nerveux" volontaire dans ses muscles; comme si les actions inhibitrices (périphériques) soustrayaient ses cellules motrices à l'action de la volonté. C'est à vaincre cet obstacle que le médecin doit s'appliquer aussitôt que possible; car il paraît bien que les chances de réussir sont d'autant plus grandes que la blessure est plus récente. Dès que les premiers mouvements volontaires ont pu être exécutés une fois, le blessé les répétera plus facilement et aussi souvent qu'il le pourra.

Sans doute les troubles du tonus neuro-musculaire ne seront pas supprimés du coup, les excitations périphériques patholo-

giques continuant à agir, mais leur action sera compensée, partiellement du moins, par l'intervention de l'influence antagoniste des mouvements volontaires.

L'exemple dont il vient d'être question doit être considéré comme pathologique; dans ce cas les troubles engendrés par le traumatisme dépassent notablement en intensité ce que l'on observe couramment; mais cet exemple met en relief la nature de ces troubles qui existent après tout les traumatismes à un degré variable.

Prenons un autre exemple, celui d'une plaie pénétrante articulaire du genou ou même une hémarthrose simple. L'expérience démontre que ces traumatismes entraînent très rapidement de l'hypotonie et de l'atrophie musculaires de la cuisse si on les abandonne à leur évolution, au repos; ainsi une plaie articulaire opérée dans les délais voulus, que guérit sans réaction inflammatoire, est suivie d'impotence fonctionnelle très accusée; au contraire qu'on pratique la mobilisation active précoce, que le blessé exécute dès les premières heures des mouvements actifs et fréquents, et ces troubles fonctionnels se réduisent à un minimum, l'hypotonie musculaire est toute passagère et l'atrophie presque nulle.

Comment expliquer la répercussion qu'exerce la lésion articulaires sur la musculature qui commande l'articulation? Des recherches expérimentales ont démontré que les troubles neuro-musculaires consécutifs à un traumatisme articulaire peuvent être évités si on sectionne préalablement les racines postérieures dont les fibres desservent le segment de membre intéressé. Il en résulterait que les excitations nerveuses périphériques, parties de la région traumatisée et conduites vers les centres médullaires par les voies centripètes, jouent un rôle prépondérant sur le tonus nerveux; si on exclut ces excitations par la section des racines postérieures, on exclut du même coup les troubles du tonus neuro-musculaire. Chez l'homme il est impossible de soustraire complètement les centres médullaires à ces excitations périphériques; mais on peut tenter de rétablir l'équilibre du tonus neuro-musculaire par l'intervention de la voie motrice, c.à.d. par l'influx nerveux volontaire. Et c'est ce que réalise, en partie du moins la mobilisation active précoce; des mouvements actifs du genou, après une plaie articulaire, exécutés immédiatement après l'opération chirurgicale, et répétés d'une façon continue, réduisent à un minimum les troubles d'hypotonie et d'atrophie musculaires. L'expérience clinique nous le démontre journellement. Sans doute la mobilisation active n'empêche pas ces troubles d'une manière certaine, il faudrait pour cela que la lésion fût supprimée entièrement; aussi longtemps qu'elle existe, si bien traitée soit-elle, elle exerce une action certaine. La mobilisation active précoce n'a d'autre but que de réduire cette influence à un minimum.

J'ai cité ci-dessus deux exemples de troubles du tonus neuro-musculaire consécutifs à des traumatismes de gravité différente: dans le premier cas ces troubles atteignent un degré anormal, pathologique; dans le second, il s'agit de troubles constants

normaux. Dans l'un et l'autre cas, ils peuvent être combattus efficacement par les mouvements actifs précoces.

On pouvait supposer que ces troubles ne sont pas spéciaux à telle ou telle lésion particulière mais qu'il s'agit là d'un phénomène général, inhérent à tous les traumatismes. Il était par conséquent logique d'étendre les indications de la mobilisation active précoce à la plupart des traumatismes. C'est ce que nous avons fait à l'Ambulance du Dr. Depage. Le service chirurgical qui nous est confié reçoit spécialement les plaies des articulations, des mains et des pieds; nous avons donc eu l'occasion de faire de nombreuses observations dans le domaine qui nous intéresse pour le moment.

Quelques mots d'abord sur le sens que nous accordons à l'expression "mobilisation active immédiate." D'après les considérations théoriques que nous venons d'exposer, il va de soi que seuls les mouvements actifs les mouvements volontaires du sujet peuvent exercer une influence utile; ce qui importe avant tout, au début du moins, ce n'est pas tant de combattre l'hypotonie, encore moins l'atrophie, que de rétablir entre les centres volontaires et l'organe périphérique du mouvement, les relations qui existaient à l'état normal avant la blessure. C'est peut-être la période la plus difficile, celle où l'intervention du médecin est le plus nécessaire; il faut initier le blessé aux mouvements qu'on exige de lui. Si, lors de la visite, le médecin lui ordonne distraitement et, brièvement, de faire des mouvements sans lui donner d'autres explications, il n'obtiendra rien de son malade, et pour cause. Presque régulièrement, même s'il y met sa bonne volonté, le blessé reste incapable de fournir le travail demandé parce que, en général, il a la tendance d'exécuter d'emblée des mouvements compliqués, tels que deux qu'il était habitué d'exécuter presque automatiquement avant sa blessure. Il faut au contraire l'initier à l'exécution de mouvements aussi simples que possible, décomposer ces mouvements; ainsi pour une blessure de la main, il serait illusoire de l'obliger d'emblée à saisir un objet, à écrire, etc. Il n'y réussirait pas; mais il réussira facilement à ébaucher d'abord à accomplir ensuite le mouvement de flexion et d'extension d'un doigt, puis de deux doigts et ainsi de suite pour les différents groupes musculaires sur lesquels on se propose d'agir.

C'est donc par la décomposition des mouvements, par l'initiation méthodique qu'il importe de commencer. Cette initiation est parfois laborieuse, elle exige du médecin du temps, de la patience, et cet ascendant qui donne au blessé la confiance, la volonté.

La mobilisation active doit être précoce; l'expérience démontre que les mouvements volontaires se rétablissent d'autant plus facilement que le traumatisme est plus récent; c'est comme si l'influx volontaire rencontrait à ce moment moins d'obstacle et retrouvait plus aisément sa voie; il semble qu'alors l'équilibre du tonus nerveux puisse être plus facilement rétabli. L'idéal serait de pouvoir, dans chaque cas, commencer immédiatement

après la premier traitement chirurgical, après l'opération; mais fréquemment des raisons d'ordre primordial s'y opposent; ainsi dans les fractures diaphysaires des os longs des membres, la contention en bonne position exige l'immobilisation; il en est de même pour certaines plaies articulaires avec lésion osseuse; bref, partout où la consolidation anatomique, la cicatrisation, exigent l'immobilité, il faut renoncer à la mobilisation ou plutôt la retarder ou la réduire. Partout au contraire où l'état anatomique le permet, il y a un avantage considérable à rétablir immédiatement les mouvements volontaires, qu'il s'agisse de traumatisme fermé ou de plaie. En ce qui concerne les plaies de guerre, la pratique de plus en plus répandue de la suture primitive immédiate ou retardée élargit beaucoup le champ d'action de la restauration fonctionnelle précoce. Le dogme de l'immobilisation des membres blessés, des traumatismes articulaires surtout, tend de plus en plus à disparaître, et il est possible que ce ne soit qu'un début.

On pourrait croire a priori que les mouvements actifs exécutés immédiatement ou très tôt par les membres atteints de plaies récentes doivent être particulièrement douloureux. L'expérience démontre qu'il n'en est rien; il existe à ce point de vue un contraste frappant entre les mouvements passifs et les mouvements actifs; autant les premiers sont pénibles, douloureux, autant les derniers sont indolores. Et ceci est vrai non seulement pour les traumatismes, mais aussi pour certains foyers inflammatoires: nous avons eu l'occasion d'expérimenter dans un certain nombre de cas d'arthrite purulente du genou le traitement inauguré par le Dr Willems (arthrotomie et mobilisation); il est étonnant de constater que les mouvements actifs exécutés par la malade lui-même sont laborieux mais nullement douloureux.

Nous n'avons jusqu'ici envisagé la mobilisation précoce que comme moyen de rétablir l'équilibre du tonus neuro-musculaire et par là combattre l'hypotonie et l'atrophie musculaires. A cet avantage immédiat s'en ajoute un autre, éloigné; empêcher les raideurs articulaires, les positions et attitudes vicieuses. Sans doute celles-ci relèvent parfois de processus cicatriciels que la mobilisation précoce ne pourra toujours enrayer, mais qu'elle combattra et dont elle pourra réduire la gravité.

Technique de la restauration fonctionnelle par le travail précoce.

Je n'envisagerai pas ici le traitement des moignons d'amputation par le travail précoce; ce sujet se trouve traité dans le rapport du docteur Martin. Il ne sera question que de certaines blessures ou mutilations partielles des membres, des mains, des pieds.

Lorsque nous entreprenons la mobilisation active d'un membre, ce n'est pas seulement dans le but d'obtenir du blessé des mouvements habituels de la vie courante; ainsi pour le membre inférieur ce que nous recherchons c'est la marche, c.à.d. la fonction de soutien et de translation du poids du corps; au membre supérieur

le but est de rendre au blessé l'usage utile du membre, par exemple, la préhension de la main, etc. La récupération effective des mouvements utiles n'est possible que par le travail.

MEMBRE SUPERIEUR.

Main.—La plupart des plaies de guerre de la main sont suturées immédiatement et guérissent généralement par première intention. Afin de permettre la mobilisation immédiate des doigts, nous réduisons le pansement à un strict minimum; pas de volumineux pansement sur toute la main quand un seul ou deux doigts sont blessés. Des le lendemain commence la mobilisation active méthodique, non seulement des doigts intacts, mais aussi des doigts blessés, à moins qu'il ne s'agisse d'une fracture de la première phalange ou d'une suture d'un tendon fléchisseur. Les mouvements commencent par la flexion et l'extension des phalanges les unes sur les autres, puis des doigts sur la main, l'adduction et l'opposition du pouce; viennent ensuite les mouvements combinés du pouce avec les différents doigts et enfin les mouvements utiles de préhension; le blessé s'exerce à saisir un couteau, une cuiller, un crayon, et la plupart des objets qui lui servent dans la vie de relation; dans bien des cas, ces exercices ne suffiraient pas à maintenir ou à rétablir l'activité musculaire, surtout parce qu'ils ne sont pas continués méthodiquement; c'est le travail à l'atelier qui suppléera à leur insuffisance.

Pour les mutilations partielles de la main, nous procédons de même; une des plus fréquentes est la mutilation du segment radial: perte des deux phalanges du pouce, de l'index et du médius avec une partie de leurs métacarpiens; dans ce cas nous pratiquons l'ablation totale des deuxième et troisième métacarpiens, de telle sorte que le 1^{er} métacarpien se présente comme un pouce nouveau par rapport aux doigts restants.

Ces mutilés sont, comme les autres blessés des mains, soumis au même traitement de restauration fonctionnelle et dirigés sur l'atelier dès les premiers jours; très rapidement ils adaptent les organes restants aux fonctions nouvelles qui leur incombent; il est surprenant de voir combien la fonction de préhension se rétablit rapidement; nous avons vu de ces mutilés exécuter après peu de temps des travaux très délicats.

A l'atelier, la restauration fonctionnelle de la main consiste essentiellement dans la récupération de la fonction de préhension; à cet effet les blessés sont mis au travail du bois; ils débitent du bois à la gouge et au maillet; le docteur Martin a construit un jeu de maillets montés sur manches en 7 gross eurs différentes; le travail commence avec le maillet à gros manche et se termine par le maillet à manche fin et à tête lourde. Si, à l'arrivée à l'atelier, la préhension est pratiquement nulle, il est indispensable de fixer le manche de l'outil dans la main du blessé par des tours de bande; en très peu de jours la préhension peut se rétablir.

Poignet.—Le travail a pour but de rendre au poignet le mouvement dans les deux plans: flexion et extension d'une part, mouvements de latéralité d'autre part. Pour localiser la mobilisation

active dans ces deux directions, on immobilise l'avant-bras contre le thorax au moyen d'une ceinture; seuls le poignet et la main restent libres; suivant que l'avant-bras est fixé en pronation ou en supination, le blessé peut, l'outil à la main, exécuter les mouvements de flexion et d'extension ou bien les mouvements de latéralité. Les exercices de pronation et de supination sont exécutés par le vissage ou le forage dans le bois.

La fracture de l'épiphyse inférieure du radius est également susceptible de la mobilisation très précoce; nous procédons de la façon suivante: la fracture est d'abord réduite, ce que l'on obtient facilement. D'une main le chirurgien saisit l'avant-bras du blessé et l'immobilise solidement, de l'autre il saisit la racine de la main; par un mouvement brusque, accompagné de traction, il reporte la main du blessé en flexion et en abduction cubitale; cette manœuvre très rapide permet toujours la réduction. La position de la main en flexion et abduction cubitale forcée est maintenue par une attelle dorsale et des tours de bande qui laissent les doigts libres; la période d'immobilisation dure de quatre à sept jours pendant lesquels le travail des doigts est déjà possible. Le pansement immobilisant est définitivement écarté et le travail actif commence, travail au maillet etc. La récupération fonctionnelle est extraordinairement rapide, sans que la réduction soit compromise.

Coude-épaule.—Les blessés que nous avons eu l'occasion de traiter par le travail précoce étaient atteints de plaies articulaires simples ou de plaies osteo-articulaires avec lésion osseuse parfois assez importante (destruction d'un condyle huméral par exemple). Les exercices et travaux exécutés à l'atelier sont les mêmes que ceux que le Dr Martin décrit dans son rapport sur le traitement précoce des amputés du membre supérieur: pour le coude, travail à la lime, à la scie; pour l'épaule, travail au maillet à bras libre, travail à la scie, à l'enclume. (Pour les détails voir le rapport du Dr Martin.)

La fracture fermée de la clavicule bénéficie aussi largement du traitement par le travail; depuis longtemps, comme beaucoup d'autres d'ailleurs, nous avons renoncé aux appareils et pansements immobilisants qui, en réalité n'immobilisent que les muscles et articulations et nullement les fragments de l'os fracturé. Dès le premier examen, nous faisons exécuter des mouvements actifs de plus en plus étendus du membre blessé: projection en avant, élévation en abduction; à la première séance, on peut obtenir presque régulièrement que le blessé porte le bras en élévation verticale, la main à la nuque ou au moins au sommet de la tête. Bien conduits, sous la surveillance patiente du médecin, ces exercices ne sont nullement douloureux; ils sont laborieux au début mais deviennent de plus en plus aisés au fur et à mesure que le blessé les multiplie.

Comme nous l'avons dit au début de cette communication, la restauration fonctionnelle des blessés est une nécessité absolue, elle doit être conduite simultanément avec le traitement médical dont elle fait partie. Pour le membre supérieur, il nous paraît que le travail précoce est la méthode de choix. Les résultats qu

nous avons observés ont dépassé nos espérances. Pour que cette méthode produise tous ses effets utiles, il faut que le travail soit guidé par le médecin qui prescrit les exercices au moment voulu, décompose le travail, le gradue dans le temps et dans l'intensité, localise les mouvements sur les segments de membre qu'il se propose d'atteindre.

La méthode est d'application simple: à l'Ambulance du Dr Depage, elle est réglée de la façon suivante: les premiers mouvements, mouvements élémentaires, sont exécutés au lit même du blessé; dès que la restauration exige l'intervention du travail, le blessé passe chaque jour un certain nombre d'heures à l'atelier du Dr Martin, qui a ménagé à cet effet l'outillage nécessaire. Chaque matin dix, quinze, vingt blessés de notre pavillon se rendent au travail, et parmi eux bon nombre d'opérés récents.

MEMBRE INFÉRIEUR.

Les principes sont les mêmes qu'au membre supérieur mais l'application en est plus aisée du fait que le travail est moins délicat. Le travail du membre inférieur consiste dans le soutien et la translation du poids du corps; il se résume à la marche correcte du blessé.

Pied.—La mobilisation active a un double but: récupérer la marche et si celle-ci est impossible, empêcher les attitudes vicieuses. S'il s'agit de plaie de l'avant-pied, ou de fracture d'un métatarsien, nous faisons lever les blessés très précocement, dès les premiers jours, en interdisant formellement l'usage des béquilles. Eventuellement le soulier est garni d'une semelle métallique plantaire qui soutient la voûte. Pour les fractures du tarse, nous sommes restés très prudents jusqu'à l'heure actuelle. Lorsque les points d'appui de la voûte sont intéressés par le traumatisme, nous redoutons l'effondrement, toujours très préjudiciable; la marche en ce cas n'est permise que tardivement mais les mouvements réguliers et méthodiques au lit sont prescrits.

C'est dans les *plaies articulaires* que la mobilisation active précoce rend les plus grands services. Cette méthode a été inaugurée par le Dr Willems (de Gand). C'est actuellement le complément nécessaire du traitement chirurgical par la suture immédiate de la jointure. Les plaies pénétrantes simples ou avec lésion osseuse peu importante ne doivent plus être immobilisées pendant de nombreux jours; au contraire dans la plupart des cas il y a avantage à pratiquer des mouvements actifs de l'articulation blessée dès le lendemain ou le jour même de l'opération. Grâce à la mobilisation et à la marche précoce, on n'assiste plus à la fonte des muscles, on ne voit plus l'atrophie et la raideur du membre, parfois si longues et si difficiles à guérir.

FUNCTIONAL RE-EDUCATION; PRELIMINARY CONSIDERATIONS.

BY MAJOR W. G. TURNER, M.C., C.A.M.C., AND MAJOR G. W. F. BOYER, C.A.M.C., Granville Canadian Special Hospital.

Professor Amar has classified the organization of the work of the wounded in three periods after the orthopædic and restorative work has been completed :—

“ In a first period, called functional re-education, the point in question is to analyse the movements of man in order to establish his functional state, to revise as much as possible his motive power, and finally to assure oneself that a continued and prolonged exercise does not compromise his organic resistance. In a second period, one will strive to fill up the deficit caused by impotence by means of an orthopædic system; suitable apparatus will be adapted to the mutilated limb, and then will start the professional re-education, which is the third and last period.”

The subject of re-education is such a wide one that it appears wise to call your attention to certain factors which may be remedied, and which manifest themselves during the orthopædic period or during the first period referred to above. These occur in the class of cases such as are seen at a special hospital like the Granville Canadian Special Hospital. Some preliminary measures might be adopted in such cases before they enter the classes for regular vocational re-education.

One of us (W. G. T.) has been much impressed by certain facts ever since working in the orthopædic clinic in Munich some years ago. There it was essential that the patient know how to read and write, and the hours of working be adapted to the physical condition of the patient. The cripple institute was associated with the clinic. The allocation of work and training was made and graded to the functional efficiency and organic power of the individual. It was striking how, very shortly after the ambition of the patient was aroused, his working hours became longer without any physical detriment. At regular intervals the patients were inspected physically, to see if the advance of surgery would enable any cases to have the disability reduced. Since working in a special hospital of war disabilities these facts have been accentuated. We are going to carry on a vigorous national propaganda. Are we carrying on a propaganda among our disabled soldiers? There is a varying long interval of time, in months, during which these soldiers are having treatment for reducing joint disabilities, waiting for amputated stumps to be healed, stretching contractures, and, in extensive hand and wrist

lesions, carrying on the necessary treatment to increase function, or in putting off the dire necessity of removing a useless hand. In the Granville Hospital such time is necessarily shortened as we clear the cases to Canada as soon as possible, but in orthopædic centres in this country and other home centres a certain amount could be accomplished. Could not deficient education be taken up in such cases when it can be applied? In all single hand or arm disabilities might not a reprint of that excellent article on Count Zichy—"Lancet," 5th August, 1916—be given to the soldier? At least, until we have teachers for the same, such as at Montpelier, where Dr. Emile Jeanbreaux rules, and where M. Tammenne teaches the re-education of the left hand, the pamphlet would in many cases bring some results. It is our custom to advise such cases to work regularly at writing, to practice the co-ordination of the hand by picking up small pills or pins and putting them in a box, &c. In a proportion of cases there is an eagerness to follow the suggestion. One officer went at once and bought a school copy book and worked very keenly. But a few illustrated pamphlets of the above article and that of "Lancet," 7th April, 1917, would help a great deal in stimulating ambition.

In the leg amputation cases there has been keen co-operation with Colonel Clarke. He has now arranged that as many cases as possible will be fitted with peg legs. The results have been very gratifying. The patient almost at once becomes more independent, educates himself as to balance and gait, and incidentally, when fitted with an artificial leg, wears it comfortably, and is prepared to start in at once for vocational training or resuming civil occupation where such is suitable. A large percentage of our soldiers are farmers, and in our Western country particularly distances are long and "leg work" is very great. These men are asked to think seriously about carrying on in such work, and to think seriously what they would like to take up. The number who have stated they wanted some time in business college is suggestive. Could not some propaganda be used at this stage, such as authoritative and periodic information about the trades in which there is demand for skilled labour and jobs are to be had—the demand for typists, &c.? As far as possible these men are assured that they will receive the regular pension for permanent disability, no matter how efficient they become. The suspicion that efficiency will be followed by reduction of pension, as you know, is present in a certain number of the more ignorant. As to future training of amputation cases, more competent judges than myself will organize that, but one fact needs to be recorded—there is no more cheerful ward anywhere than that of limbless soldiers. Would it not be wise to have them segregated in their training until fully efficient or until the time when greater efficiency is brought out by competition, before they are thrust into general competition with their more fortunate fellow beings? The question of the disabled farmer taking up subsidiary rural occupation is a very important one. I mention this here as the tradition of a man's occupation and his natural leaning to a job of choice are factors which cannot be overlooked, and still more

to the soldier after hospitalisation and the campaign life, in which two thoughts are paramount—the enemy and his rations.

In wrist, elbow and shoulder disabilities the full education of a good right arm must be improved. Where the right arm has been disabled or partially disabled, the active re-education of the left hand and arm to act for the right must be emphasised, also the use of the disabled right in subsidiary function to the other.

In the treatment department of the Granville Hospital, besides massage and hydrotherapy, the greatest importance is attached to the gymnasium and curative workshops. Here the re-education has been made a great factor. In the former, the results obtained by Capt. Patterson, C.A.M.C., have been very stimulating. The system demands an enormous amount of time and patience. By individual attention and small group instruction this officer and his faithful sub-staff have been a decided example. The re-education of the intrinsic muscles of the hand and foot have been specialised, so that the patients realise it and co-operate more and more keenly.

The appreciation of so-called "pain block," which causes such active resistance in opposed muscles, is highly important, and we have many examples of pretty extensive fixation of the fingers, wrist, elbow and knee, worked out to a satisfactory result under the "active-passive" work of the patient and instructor where massage and passive movement have failed. The complete mental concentration and co-operation of the patient are the primary essentials, and it is only when special gymnasium treatment has reached a finality that such special cases are drilled in larger groups. The ground work here is very thorough, and we are optimistic as regards progressive advance.

The curative workshops, as you all know, have become a great factor. In these the work is regularly prescribed, and the patients have to report just as for treatment. You will be interested to know that it is rare to have a soldier reported as absentee. In fact, working overtime is very frequent. The mental incentive of doing a job more or less "on his own" brings about, by the exercise, a decided functional result. In these shops the various requirements of hospital apparatus, splints, surgical boots, peg legs, hospital furniture and all kinds of repairs are carried out under the instruction and advice of skilled instructors. The relations between the two are highly satisfactory. Gardening in the summer has been much encouraged. The success of these departments is due to the interest of Colonel Clarke and active work of the sub-staff. We hope to still further specialise certain "work treatment" for special cases, and to have certain special shop work to co-ordinate and further the results of special gymnastics. As a variation, the M.O. in charge has the privilege of organising baseball, handball, and other games for the different classes of patients. This brings in the competitive spirit, which is also encouraged in the shop work. Among other cases, last year, the catcher of the baseball team obtained a striking improvement in his knee condition. This

system of correction and re-education has spread out great fields for future results in cases both of organic and functional disability.

May I again draw the comparisons : months or years of campaign conditions, these thoughts—the enemy, rations, a dry sleep ; then a grave wound, months of hospitalisation, and then the above as an applied system.

It may be asked, Do you use massage, mechanotherapy and hydrotherapy? Yes, indeed, and find them of the greatest value ; but in all these cases passive treatment must be supplemented as soon as possible by the active voluntary effort of the patient.

Emphasis must be laid on the more careful re-education and supervision of a frequent cause of disability—*i.e.*, that of nerve lesions. The most frequent nerves affected are ulnar, musculo-spiral, median and sciatic. Under the present arrangement of collecting such cases in special hospitals an advance has been made. Our anxiety is the fate of these cases three months or more after the nerve suture has been done. An ulnar nerve lesion carefully attended to, *i.e.*, contractures cleared up and suppleness fully established, gives a small percentage of disability even when the nerve suture has failed. That is to say, when the partially disabled hand is made subsidiary to the sound one. In a right arm lesion, full re-education of the left arm and hand is imperative, the right becoming subsidiary. In musculo-spiral nerve lesions it is very satisfactory to note the excellent compensation accomplished by tendon transplantation. All special clinics concur in this. The re-education of the transplanted muscles to the opposite function, *i.e.*, from flexion to extension, takes place within 3 to 4 months after the operation ; after that muscular development is necessary. One reason for this is that the extensor function of hand and fingers is fairly gross, especially in the common extensor group ; but the thumb results are equally satisfactory, since the important factor of steadying the *os* metacarpi pollicis has been recognised. The re-education is simple. Daily, or twice daily, after the third or fourth week, the hand is taken off the splint, and the patient is shown how to slowly carry on the actions and to fix his mind constantly on the same. In a short time the dissociated function becomes established. After this, regular hand extension exercises and wrist class in the gymnasium will complete the result.

The disability of the median nerve lesion is great. The loss of function to the thumb, index and middle fingers disables the hand to a marked extent. Yet much thought is being expended, and it is hoped some compensation can be worked out in cases where the nerve damage is irreparable. Can a satisfactory transplantation be done utilising the supinator longus and extensor carpi radialis muscles? We must encourage such optimism. As was mentioned above, the present anxiety is the care and supervision of these cases for a long period, yet the daily treatment is for only a short time. Can this extra wasted time be utilised in education of some kind?

The problem of the duration of time peripheral nerve lesions of varying severity should be kept in hospital in England before being returned to duty, or to Canada for continued treatment, involves a consideration of each case largely on its own individual characteristics; but perhaps a few general remarks will not be amiss as a guide in the disposal of these usually protracted cases. After a patient is admitted to hospital, he is at once examined in detail with Faradism, Galvanism and the Lewis Jones' Condenser, and the reaction of each muscle or group of muscles is carefully recorded. At the same time, a careful chart is made of epicritic, protopathic and deep nerve changes, if there are sensory fibres in the injured nerve. The case is then put upon treatment consisting usually of galvanism (or faradism), massage, passive movements of joints and tendons and an apparatus to prevent elongation of the paralysed muscle.

This is carried on for a period of two weeks, when re-examination is made and the results charted, after which another period of two weeks is given to continue treatment. Depending upon the degree of change, it is easy in this way to follow improvement or retrogressive changes. Those cases of severe lesion with marked changes soon are assorted, and operation for suture or freeing from callous or scar is recommended, and they pass on to the hands of the surgeon. But our present concern is only with the non-operative, or post-operative recovering cases. It is necessary to consider these cases under different headings:—Voluntary power, reaction to Faradism, condenser reactions, and sensory reactions.

The return of voluntary power after the injury of peripheral nerves always ushers in a new era of hope and progress. The question of the length of time which must elapse after a serious injury to a peripheral nerve before good useful motor function can return is the one that concerns us chiefly here. It is, of course, understood that the muscle fibres have been kept in a good state of nutrition as outlined in the preceding paragraph. The difficulty in arriving at an answer to this is at once apparent when we remember that it is frequently impossible to keep a patient under observation for longer than from 3 to 4 months. There are many factors to be considered in estimating the time when voluntary power may be expected, such as the hearty co-operation of the patient, the active exercise he will give a recovering muscle, the freedom of joint and tendon movement, and the degree of fibrosis in the nerve; but it has been our experience here that a period of from 3 to 6 months is required in the average recovering case before there is satisfactory use of the once paralysed muscles.

There is nothing to add to the accepted view of the prognostic value of faradism. By the time irritability has returned to moderate currents of faradism the patient has regained voluntary power, providing he has given his whole-souled effort to co-operation and his muscle tissue has not suffered from disease,

stretching or pressure from splints. It has been our experience that in from 3 to 5 months after the return of faradic irritability, useful voluntary function has usually returned.

The condenser reaction is one of the most useful methods we have of graphically recording the progress made during regeneration. From our experience, we conclude that if the muscle requires 1 microfarad or more after some weeks' treatment (the cases have usually been wounded 3 or 4 months previously), and providing the muscle tissue is in good condition, we are dealing with a very serious nerve lesion. If the reaction record shows a slight month to month increase in irritability, we are encouraged to continue along the same lines of treatment. Condenser reactions of under 1 microfarad and over 0.5 microfarads at 100 volts will require as long as six or eight months before the muscular power will have returned sufficiently to give a low reaction point (*e.g.*, .025 M.F. at 100 v.). Then an additional 3 or 4 months are required before the result is complete. At the same time, let us remember that the condenser reaction does not solely indicate the prognosis. As complete return of function is approached, the improvement as shown by the condenser reactions becomes slower.

The most disabling sensory lesions are the median injury close to the wrist and sciatic injury producing hyperalgesia of the foot sole. In the median cases, if the right hand is involved it is a severe disabling condition, even when the long flexors of the fingers are quite free from adhesion. Then we are very ready to recommend early operation for the preservation of all the sensory functions of the index and middle fingers and the tip of the thumb. The motor disturbance may be negligible, but the lesion is very prone to incapacitate the man materially for all but rough work; and in view of the prevalence of cigarette smoking and resulting burns and then indolent ulcers, one realises the seriousness of this disability in returning this type of case to duty. The majority of serious median nerve lesions appear with slowly healing abrasions on the index or middle fingers. It is, therefore, best to dispose of such a man by placing him in unexposed employment for several months after the operation for section, and a shorter period if only freeing from scar has been done. In closing, should be mentioned the hyperalgesia, especially to pressure, in the front half of the sole in sciatic nerve lesions. Operation has relieved some of these, especially where fibrosis is dense and annular, but in others the progress is very slow. Every effort is made to force these cases to walk without spastic varus or toe flexor spasm.

The use of the excellent apparatus designed by Professor Amari is greatest at the time of the first period in his classification, and we have not been able to apply it so much at the Granville owing to being, so to speak, a station en route. Captain Fletcher, who has since returned to Canada, made a number of interesting observations on the use of the same.

Conclusions.

To recognise as early as possible the percentage of disability in an arm or hand, make it the subsidiary organ and push the re-education of the sound one.

To utilise some of the wasted time during a stay in hospital to fill educational defects.

To utilise to the fullest extent the " active passive " treatment of the patient, plus gymnasium and curative workshops.

To carry on a certain amount of propaganda work for the information of certain permanently disabled cases.

GYMNASTIQUE MEDICALE ET MEDECINS-GYMNASTES.

PAR LE DR. A. DE MARNEFFE, Professeur à l'Ecole Normale de
Gymnastique et d'Escrime de Belgique.*

La “ *Conférence Inter-alliée sur les questions intéressant les Invalides de la Guerre en mai 1917* ” dans sa section 1^{ère} sur la physiothérapie, a prouvé une fois de plus combien peu de personnes connaissent la signification exacte des termes *Gymnastique médicale et médecins-gymnastes*. Beaucoup ignorent les mots ; certains les comprennent mal. Cette ignorance, d'ailleurs, pour certains physiothérapeutes est tout à fait inexcusable.

Je pense que tous les médecins devraient connaître les grandes lignes de la gymnastique médicale, ses principes fondamentaux et ses indications les plus générales. Cela leur permettrait d'entrevoir quel merveilleux agent thérapeutique hélas trop peu connu ! elle constitue pour eux. C'est pourquoi j'ai écrit cet article, tout de généralités, en laissant de côté, à dessein, les détails techniques d'exécution pure qui ne sont utiles qu'aux praticiens spécialisés.

La science de la gymnastique médicale n'est rationnellement et académiquement enseignée qu'à Stockholm.

Dans d'autres pays certes, en Angleterre, en Ecosse, en France, des médecins et certaines sociétés ont entraîné et formé des masseurs et des masseuses. En Ecosse, certaines Ecoles sont même assez réputées. Toutefois, j'ai eu l'occasion de posséder pendant quelques mois des masseuses, diplômées par les Ecoles écossaises, mais je regrette de devoir avouer qu'elles sont loin d'atteindre—nous le comprendrons aisément plus loin—le degré d'instruction médicale et de pratique gymnastique des médecins-gymnastes suédois.

La guerre a vu naître—à juste titre, puisqu'elle était peu prévue et que l'on ne possédait pas beaucoup d'autres éléments compétents ; nécessité fait loi,—plusieurs “ écoles de massage ” qui achèvent leurs cours en quelques semaines ou en quelques heures et qui les dispensent à toutes les personnes de bonne volonté ! L'Université de Gand est la seule institution d'enseignement-supérieur, je pense, qui marchait sur les traces de Stockholm. Elle parvenait déjà à “ sortir ” de bons professeurs de gymnastique et elle se préparait à former des Directeurs de gymnastique et des Médecins-gymnastes.

* Je vois remercier Miss E. M. Loveday, G.D., Médecin-Gymnaste diplômée de Stockholm. Professeur à la Ville de Bruxelles, qui a créé et organisé les deux intéressants et importants services de gymnastique médicale et de Ré-éducation motrice collective à l'Institut de physiothérapie de Beausecours et qui m'a donné de précieux éléments pour la rédaction de cet article.

Pour faire comprendre la valeur du diplôme que possèdent les gymnastes médicaux suédois, qui sont aux masseurs ce que les chirurgiens sont aux infirmiers, je dois passer rapidement en revue ce qui se pratique à l'Institut Central et Royal de Stockholm. Cet Institut est un établissement d'enseignement supérieur spécial, comparable à une grande faculté universitaire. Il a pour but d'enseigner les sciences gymnastiques sous leurs trois formes : (a) gymnastique pédagogique ou scolaire ou de développement ; (b) gymnastique militaire, comprenant les escrimes ; (c) gymnastique médicale. Il forme des *professeurs* et des *directeurs* de gymnastique civils et militaires et des *médecins-gymnastes*.

“ La plupart des élèves qui suivent les cours de l'Institut— nous dit le Dr. Lagrange, dans son ouvrage (*La médication par l'exercice*)—sont des jeunes gens de famille ; il n'est pas rare d'en trouver qui portent des titres nobiliaires et de grands noms. Aucun jeune homme ne peut être inscrit comme élève de l'Institut Central, s'il n'est pas muni du certificat de *maturité*, qui est, en Suède, l'équivalent de notre baccalauréat. Pour les jeunes filles, on exige une sanction scolaire équivalente, le brevet supérieur.”

D'après les instructions réglementaires, les candidats, entr'autres qualités particulières, doivent posséder “ une bonne constitution corporelle, une musculature robuste et bien développée, de la facilité et de la souplesse dans les mouvements, de l'assiduité dans le travail, une santé très bonne et une disposition marquée à la conserver, une humeur bonne et égale. etc.”

Le nombre des élèves étrangers, que l'Institut admet tous les ans, est très restreint ; ils doivent subir un examen peut être plus difficile et plus sévère que les nationaux. Les Suédois sont d'ailleurs favorisés, grâce à une éducation physique rationnelle, qui leur est appliquée quotidiennement depuis l'âge de sept ans et dont les principes théoriques sont enseignés dans leurs écoles.

Les cours à l'Institut ont une durée de deux ans pour les femmes, trois ans pour les hommes qui sont obligés de suivre un cours de gymnastique militaire ; les médecins diplômés exceptionnellement ne suivent les cours que pendant un an. “ Les cours de gymnastique pédagogique, militaire et médicale sont suivis simultanément par tous les élèves-hommes. Il existe trois diplômes différents, que l'on considère comme autant de degrés du même enseignement, le diplôme de pédagogie étant “ le plus simple de la série et le diplôme médical le plus complet ” (Lagrange). Il y a donc lieu pour le médecin traitant de s'assurer, en cas de doute, que le praticien suédois possède bien le diplôme de *Gymnastik-Directör* (G.D.).

Les cours de gymnastique médicale comprennent : l'anatomie avec des exercices pratiques de dissection sur le cadavre, la physiologie, l'analyse des mouvements, la pathologie, toute la théorie et la pratique de la gymnastique médicale proprement

dite. Les élèves doivent consacrer, au moins trois heures par jour, au traitement des malades ; la salle de gymnastique médicale est en réalité une salle de consultation et de clinique, ouverte à tout malade. Tout l'enseignement suédois est d'ailleurs rarement livresque et présente toujours ce même esprit pratique.

A côté de l'Institut Central, il existe à Stockholm plusieurs "instituts" ou cliniques de gymnastique exclusivement médicale, à la tête desquelles nous trouvons des médecins tels que Kleen, Wide, etc. C'est dans le "*Handbok i medicinsk gymnastik*" de Wide, que j'ai largement puisé pour cette note.

L'Institut Arvedson, à Stockholm, réservé aux femmes, délivre, depuis quelques années, un diplôme de médecin-gymnaste qui est valable et reconnu en Suède. Le diplôme de médecin-gymnaste permet aux Suédois si se procurer un certificat décerné par un jury médical légalement constitué, les autorisant à pratiquer la gymnastique médicale, en Suède, sous la surveillance médicale.

Lagrange regrette que les médecins-gymnastes soient encore désignés sous le terme général de masseurs. " Il règne ainsi dans l'esprit du public français une confusion très préjudiciable aux spécialistes suédois. . . . De plus, la position, non seulement de médecin-gymnaste mais même de gymnaste, est infiniment plus relevée en Suède que ne le sont, chez nous, celles de masseur et de professeur de gymnastique. . . . S'il arrive qu'un officier quitte définitivement l'armée et se livre exclusivement à la pratique de la gymnastique médicale, il ne perd rien de la considération qui s'attachait à son grade ; cette considération s'augmente, au contraire, de celle qu'on accorde à son talent de spécialiste. L'un de ces officiers, M. Thure-Brandt, ancien major dans l'armée suédoise, s'est acquis une célébrité européenne. La méthode qu'il a fondée, pour appliquer aux maladies des femmes la gymnastique et le massage, a fait une révolution dans la gynécologie, au moins dans les pays où elle a été l'objet d'une étude attentive, c'est-à-dire dans tous les pays scandinaves, dans toute l'Allemagne, l'Autriche et la Suisse." (Lagrange.)

Les médecins-gymnastes sont connus depuis longtemps dans certains pays. Ils étaient nombreux en Allemagne, en Autriche et en Angleterre. Et cela se conçoit. Ces grandes nations sont les plus rapprochées de la Suède. Tout Suédois connaît et parle allemand et anglais, langues soeurs des langues scandinaves ; ces contrées offrent à ces praticiens une clientèle nombreuse et hautement rémunératrice, grâce à la compétence des professeurs d'université et des médecins nombreux que les estiment légitimement et ne les confondent pas avec les masseurs, les rebouteurs, les charlatans et même les soi-disant "masseurs suédois," usurpateurs non diplômés, qui font au système un tort considérable.

Au contraire, dans les pays de race latine, ces médecins-gymnastes étaient rares pour les motifs inverses : éloignement

du pays, différence essentielle entre les langues, ignorance dans laquelle étaient plongés à leur égard, la plupart des médecins. Je dis la plupart des médecins, parce que, dans tous les grands centres intellectuels et universitaires, il existait quelques médecins qui n'ignoraient pas l'existence et le valeur de ces praticiens spéciaux. Et à Bruxelles, par exemple, où il n'y avait à ma connaissance qu'une demi-douzaine de médecins-gymnastes diplômés, les Heger, Depage, Spehl, Lemarinel, Mersch, Marique et leurs disciples faisaient toujours traiter leur clientèle civile spéciale par ces gymnastes médicaux.

De même que le Prof. Depage à La Panne, nous, à Rouen et à Bonsecours, nous n'avons jamais confié la gymnastique médicale et ses branches dérivées qu'à des médecins-gymnastes diplômés de Stockholm. Je suis heureux de constater que, depuis la session de la Conférence Inter-alliée pour les Invalides, certains physiothérapeutes français, italiens, anglais et portugais font appel à ces spécialistes et organisent leur service de gymnastique médicale comme nous l'avons fait à Bonsecours.

Au commencement de la guerre, l'Allemagne et principalement l'Autriche ont engagé à prix d'or tous les médecins-gymnastes scandinaves qu'ils pouvaient attirer. C'est ce qui explique pourquoi leur nombre est actuellement si restreint dans les autres pays.

* * * * *

La gymnastique médicale a été divisée en *manuelle* et en *mécanique*. Cette dernière comprend la mécanothérapie, perfectionnée par G. Zander, dès 1857. C'est de la *gymnastique médicale manuelle* que je m'occuperai exclusivement dans cet article. N'oublions pas d'ailleurs que gymnastique pédagogique, gymnastique médicale et mécanothérapie ont des bases scientifiques et des principes fondamentaux communs.

P. H. Ling, dans sa gymnastique médicale, divisait les mouvements en mouvement actif et en mouvement passif.

Le *M. actif* est celui que le patient exécute lui même, par sa propre force et de sa propre volonté.

Le *M. passif* est le mouvement que le patient (P.) subit et qui est exécuté par l'intermédiaire d'une autre personne, appelée gymnaste (G.) ⁽¹⁾ Ce mouvement comprend non seulement des mobilisations de segments, mais encore toutes les manipulations qui peuvent être effectuées *sur* ces segments et qui englobent donc les différentes manoeuvres qui ont été classées sous la rubrique française de massage. C'est à tort, d'après moi, et certes contrairement aux idées de Ling, que certains auteurs veulent tracer une démarcation entre le massage et la gymnastique médicale. Le massage fait partie intégrante de celle-ci et c'est pourquoi je place constamment sous le titre de gymnastique médicale, le massage, la kinésithérapie manuelle et la rééducation motrice ;

(1) Pour abrégé, j'indique la patient par P., et le médecin-gymnaste tirant par G.

cette dernière n'étant qu'une combinaison synthétique et une application de la deuxième.

Le mouvement avec résistance est exécuté par le P. mais le G. exerce une résistance, variable avec la force du malade et avec l'effet recherché. Si le muscle actif pendant le mouvement se raccourcit, le mouvement est appelé *concentrique*. Ex. ; le P. étend l'avant-bras sur le bras malgré, pourrais-je dire, la résistance du G. Muscle actif : le triceps brachial que se raccourcit.

Dans le cas contraire, le mouvement est dit *excentrique*, les muscles actifs s'allongent. Ex. : Le G. saisit l'avant-bras du P. et exécute une extension du coude malgré la résistance du P. Muscles actifs, les fléchisseurs (biceps, brachial ant., long. sup.), qui s'allongent.

Nous voyons donc que, dans les mouvements passifs et les mouvements avec résistance, le G. règle la force. L'application scientifique et méthodique de ces mouvements avec résistance est restée longtemps l'apanage exclusif du système suédois.

Je dois dire, en passant, que les expressions telles que " mouvements passifs avec résistance," " mouvements activo-passifs ou passivo-actifs " sont totalement incorrectes et doivent être abandonnées.

A proprement parler, la gymnastique médicale n'a pas un besoin absolu d'appareils, ni d'engins spéciaux. C'est ainsi que le médecin-gymnaste, qui doit parfois traiter à domicile, se sert alors d'appareils de fortune, tels que des objets de mobilier qu'il trouve à sa portée. Mais il est certain que, chez lui, dans son institut ou dans son gymnase médical, il doit posséder des engins très pratiques qui facilitent les applications gymn.

Le *haut-plint* (hög-plint) sert pour certains mouvements du tronc et de la colonne ; il permet la fixation des jambes et des pieds, la position assise, la position à califourchon, etc.

Le *bas plint* (låg-plint), doté d'un dossier mobile et d'une rallonge pour les jambes et les pieds, sert dans les massages, permet le décubitus dorsal ou ventral, la position assise, demi-couchée, etc.

La *bomme*, sorte de poutre horizontale glissant entre deux montants et qui peut se placer à des hauteurs diverses.

L'*espalier médical suédois*, large échelle que chacun connaît.

Les *perches verticales jumelées*, mobiles afin d'être rapprochées à volonté.

Des *petites tables* de dimensions spéciales et en nombre suffisant.

Des *sièges* à hauteur variable, avec ou sans dossier ; des *tabourets* ; des *escabeaux* ; des *sangles* diverses avec poignées en bois, des *coussins* ; etc.

Certains de ces engins sont étoffés et doublés à certaines places pour en adoucir le contact et la pression. Le velours vaut mieux que le cuir, parce qu'il ne permet pas aussi facilement le glissement du membre.

Les plints et les tabourets sont visibles sur les parties laterales de la figure ; la bomme, l'espallier, les perches sont visibles dans le fond de la salle.

Positions.

En gymnastique médicale comme en gymnastique pédagogique, quand on se prépare à exécuter un mouvement, il faut prendre d'abord une *position* préalable qui est bien déterminée.

Je rappelle ici, ce que j'ai déjà dit ailleurs, que toutes nos fonctions, quelles qu'elles soient, doivent s'effectuer dans une position non indifférente mais bien déterminée pour faire rendre à la fonction son effet maximum et optimum. La civilisation et les vices de l'animal humain ont souvent altéré et modifié étrangement ces positions, logiques et ancestrales, au détriment de la fonction elle-même !

Beaucoup de positions différentes peuvent être prises pour permettre l'exécution d'un mouvement gymn. ; mais il est une règle bien établie, que chaque mouvement nécessite une position de départ bien déterminée, que le médecin-gymnaste compétent connaît ou peut facilement trouver. C'est principalement dans le choix de ces positions initiales que le méd. gymn. incompetent se dévoile, en commettant des erreurs et des fautes parfois grossières. Ces positions servent à donner un point d'appui fixe au segment qui doit se mouvoir et permettent ainsi de doser et de localiser le mouvement, en évitant la propagation inutile et néfaste des synergies musculaires, et "d'isoler" le segment. Les engins, de leur côté, ne font que faciliter, dans certains cas, cette fixation.

Je ne puis donner ici le détail de toutes les positions qui sont très nombreuses et qui toutes individuellement exigent un placement bien prévu pour chaque partie du corps et une correction qui sont minutieusement étudiés et prescrits dans les traités spéciaux. Je ne puis également donner chaque fois les explications scientifiques de toutes ces pratiques qui semblent quelquefois, à priori, à l'esprit non initié, un peu mystérieuses ou incompréhensibles. Cette difficulté d'interprétation ne dépend que d'un défaut de notre enseignement général, qui omet de nous expliquer suffisamment en détail la physique et la mécanique générales, en même temps que leurs applications à l'anatomie et à la physiologie humaines. Je ne puis que renvoyer aux auteurs suédois qui ont écrit beaucoup sur ces questions : Hartelius, Zander Kleen, Wide, Levertin, Levin, etc., aux publications périodiques scandinaves sur les gymnastiques, la physiologie, la pathologie et, en français, au merveilleux traité de physiologie de Langlois.

En gymnastique médicale comme en gymnastique pédagogique, les positions ont été divisées en *positions fondamentales* et en *positions dérivées*.

Les *positions fondamentales*, au nombre de cinq sont ; *debout*, *assise*, *couchée*, *en suspension*, *à genoux*.

1° *Position fondamentale debout*.—Talons joints, pieds à angle droit, jambes et cuisses étendues, colonne étendue et droite, ventre rentré, poitrine saillante et dilatée, tête haute, nuque étendue, menton rentré, regard porté en avant un peu au-dessus de l'horizontale, épaules effacées en arrière—adduction en arrière, —bras tombant naturellement, *très légèrement* fléchis aux coudes, aux poignets et aux doigts, doigts réunis et collés contre la face externe des cuisses. Cette position peut servir de modèle pour beaucoup d'autres.

2° *Position fondamentale assise*.—Bassin et cuisses reposant sur un siège horizontal, genoux et cou-de-pied à angle droit, pieds posés sur le sol ou sur un soutien, cuisses et jambes rapprochées, bras pendant librement le long du corps, etc.

3° *Position fondamentale couchée*.—Corps étendu avec sa face postérieure reposant sur le plint, jambes rapprochées, bras reposant le long du corps, etc. Ce n'est pas une position de repos, parce que certains muscles doivent agir pour permettre de la conserver. La véritable position de repos pour le corps humain est la position demi-couchée, cuisses et jambes demi-fléchies, avec toutes les articulations dans la position moyenne, c'est-à-dire entre la flexion et l'extension, etc.

4° *Position fondamentale en suspension*.—Suspension par les mains écartées d'une distance égale à la largeur des épaules, le dos des mains dirigé vers la face du patient (pronation). Elles saisissent l'engin qui est élevé de façon que les pieds ne touchent pas le sol, bras, tronc, jambes étendus complètement, tête légèrement fléchie en arrière, etc.

5° *Position fondamentale à genoux*.—Peu employée.

Ces positions fondamentales donnent naissance à des *positions dérivées* par un changement ou un déplacement d'un ou de plusieurs segments : une ou deux jambes, un ou deux bras, tronc, etc. Je citerai rapidement les positions dérivées les plus usuelles, sans en donner aucun détail.

LA POSITION FONDAMENTALE DEBOUT donne, comme positions dérivées :

- (a) *Par le changement des bras*.—Mains aux hanches ; (augmente la stabilité de la cage thoracique et sert dans les mouvements de tête, tronc, jambes). Mains aux épaules ; (premier temps de l'extension des bras). Mains aux clavicules. Bras latéralement ; (qui donne elle-même deux dérivées très usitées en gymnastique médicale : bras latéralement avec coudes à angle droit et horizontaux ;—Bras latéralement avec coudes à

angle droit, avant-bras, verticalement vers le haut). Bras horizontalement en avant. Le même avec appui des mains contre résistance. Mains à la nuque; difficile de faire correctement au début). Bras verticalement au dessus de la tête. Appui de l'aisselle; (sur une bomme, par exemple, qui soutient l'aisselle comme une béquille—sert dans les scolioses, les torticolis). Certaines, parmi celles-ci, peuvent s'accompagner d'appui ou de soutien des mains.

(b) *Par le changement des membres inférieurs.*—Pieds joints; (dans toute leur longueur). Sur la pointe des pieds. Genoux demi-fléchis; (angle droit). Sur pointe des pieds, genoux fléchis. Station avancée: (un pied en avant de l'autre à une distance de deux longueurs de pied). Station oblique avancée. Station écartée; (pieds écartés de deux longueurs de pied); dans les stations, le poids du corps doit tomber au milieu de l'espace qui sépare les deux pieds. Flexion et élévation d'une jambe. Fentes; etc.

(c) *Par le changement du tronc.*—Flexion tronc en avant; en arrière; de côté; rotation. Flexion tronc avec appui des cuisses; (partie moyenne antérieure des cuisses prend appui contre l'engin; sert dans les scolioses).

LA POS. F. ASSISE peut voir exécuter les mêmes changements des bras et des jambes mais ces positions sont peu usitées. Dans certains positions assise, (tronc fléchi en arrière), il faut veiller à fixer les pieds ou les jambes solidement, pendant tout l'exercice.

LA POS. F. COUCHÉE donne les dérivées suivantes: Ms. hanches. Ms. à la nuque. Bras au dessus de la tête, (dans le prolongement du corps; employée fréquemment chez les enfants). Cuisses et jambes fléchies. Jambes pendantes; (nombreuses applications). Position demi-couchée, jambes étendues où fléchies. Couché ventral total. Couché ventral, tronc et tête dépassant le plint. Couché latéral; etc.

LA POS. F. EN SUSPENSION peut s'exécuter avec les bras fléchis, avec soutien des pieds, etc.

Il existe en suédois, *pour ces positions et pour les mouvements*, toute une terminologie très pratique avec abréviations et mots conventionnels, qui épargnent les périphrases et facilitent le commandement. Cette terminologie a été facilement traduite en allemand et en anglais. En français, jusqu'à présent, malgré l'essai tenté par mon confrère et ami le Dr. Tissié, de Pau, qui emploie des mots conventionnels faisant image, on s'en tient aux abréviations des mots ordinaires. Ainsi, le mouvement de flexion latérale du tronc dans la position de départ de station écartée avec mains à la nuque s'écrit: St. éc.; Ms. N.—Fl. lat. Tr.

Mouvements gymnastiques.

Pour prendre les positions que je viens de décrire, on doit exécuter évidemment des mouvements; mais ces positions ne constituent pas à proprement parler ce que l'on nomme *mouvements* en gymnastique. Elles précèdent le mouvement vrai, sont maintenues en partie pendant celui-ci et sont reprises lorsqu'il est terminé. La tout constitue un *exercice*. Ainsi dans l'exercice St. éc.; Ms. N.—Rot. Tr. je me place dans la position de départ de St. éc.; Ms. N. puis j'exécute le nombre ordonné de *mouvements* de rotation du tronc à gauche et à droite, puis je reviens à la position de départ. Souvent le mot mouvement est employé dans le sens d'exercice.

Les mouvements les plus communément usités en gymnastique médicale sont les suivants :

Hachement—Tapotement—Percussion.

Pétrissage—Sciage—Pression.

Trépidation—Vibration.

Frictions—Effleurage.

Soulèvement—Tension—Elévation.

Flexion — Extension — Adduction — Abduction — et leurs dérivés.

Torsion—Roulement—Attitude—Suspension, etc.

HACHEMENT.—Le H. s'exécute avec différentes parties de la main suivant la région et suivant l'effet recherché. Il demande une grande pratique pour être bien fait. Il a une action stimulante parce qu'il atteint une grande quantité de fibrilles nerveuses périphériques.

H. de tête.—On emploie les extrémités des doigts et des H. rapides et forts, pour *stimuler*, dans la somnolence, l'apathie, la fatigue, lorsque le travail physique et intellectuel se fait sans l'énergie et l'assiduité habituelles. Si l'on veut obtenir une action *calmante*, chez les nerveux, les surmenés, dans l'insomnie, on emploie la face palmaire des doigts, très lentement, légèrement, pour passer petit à petit à de légères et lentes frictions avec toute la main. Cette manipulation donne de très bons résultats; plus des 10% des malades dans les cliniques gymn. reçoivent ce traitement.

H. du dos.—Indiqué dans la douleur, la fatigue du dos, inflammation et faiblesse de la musculature dorsale, chlorose, affections du coeur et des poumons, etc.

H. du Coeur.—Sur la région précordiale, s'accompagne toujours d'autres mouvements; est usité dans les affections cardiaques. J'en reparlerai dans l'exemple de traitement que je donnerai plus loin.

H. des muscles.

TAPOTEMENT.—Se pratique avec toute la paume de la main.

T. du thorax.—Est le plus important et le plus usité. Employé dans les bronchites, l'essoufflement, l'emphysème, etc. Nous verrons combien nombreux et efficaces sont les mouvements que la gymnastique médicale possède pour améliorer cet emphysème pulmonaire si rebelle aux traitements ordinaires. Par ce T. et par la vibration, la respiration devient plus complète, plus profonde en même temps que l'expectoration est facilitée. Le T. est encore utilisé dans certaines parésies, paralysies, hyposensibilités, etc. Sur le *muscle* le T. peut suivre le pétrissage.

PERCUSSION.—La percussion est le plus énergique des trois mouvements, le H. en étant le plus faible. La percussion se donne avec la main fermée. Elle n'a pas beaucoup d'indications : rhumatismes et inflammation des muscles de la hanche, névralgie sciatique, etc.

La *percussion du sacrum* est la plus commune ; dans les affections des organes du bassin : atonie du rectum et de la vessie, organes génitaux des deux sexes, etc.

Elle est quelquefois exécutée avec la main formant une cavité ou ventouse (T. ou perc. à air comprimé).

PÉTRIissage.—*Pet. des muscles*, (inflammation musculaire, rhumatisme, parésies,) les recherches nombreuses et directes par Mosso et d'autres ont prouvé que le muscle peut produire un travail beaucoup plus grand, après avoir subi une séance de pétrissage. Il est donc indiqué dans diverses affections, chez les convalescents et les alités, où il remplace l'exercice musculaire qui leur manque totalement. Ce pétrissage des muscles a encore une grande valeur comme mouvement de circulation dans les affections du coeur.

Bien que la différence ne soit pas considérable, ce pétrissage—mouvement n'est pas tout à fait le même que le pétrissage du massage. Ce dernier n'envisage qu'une action locale sur un ou plusieurs muscles déterminés et se fait plus profondément, tandis que le premier vise à une action stimulante générale beaucoup plus qu'à une action locale. C'est pourquoi, dans ce cas, on ne dit jamais pétrissage de tel ou tel muscle, mais pétrissage du bras, de la jambe, etc.

Pétrissage de l'abdomen.—Ce terme est quelquefois employé d'une manière générale pour désigner non seulement le pétrissage mais les pressions, les vibrations et les frictions qui forment toujours les manipulations courantes du *traitement gymn.* ou *massage du ventre*. Ses indications sont fort nombreuses dans les affections de l'abdomen, du coeur et dans les affections générales.

SCIAGE.—Le sciage ressemble au pétrissage et s'exécute avec le rebord cubital de la main. Il se fait plus ou moins profondément selon que l'on veuille agir sur la peau ou sur les couches musculaires plus ou moins profondes. Il ne se pratique plus que sur les muscles de la nuque, où il est moins fatigant que le pétrissage.

PRESSION.—Employée principalement pour stimuler les nerfs, elle s'accompagne d'une légère vibration et est pratiquée par l'extrémité du doigt. Exercice très agréable pour le patient, s'il est très fatigant pour le G. Le G. arrive, par des pressions rapides spéciales, à produire une réaction dans des nerfs, qui ne réagissent plus au courant électrique.

Pression sur les nerfs du dos.—(Myosites, parésies, douleurs, scolioses, chlorose, etc.)

Pression au-dessus du pubis.—Dans les affections de la vessie, des organes génitaux de la femme, prolapsus ani. Cette pression ne vise pas un viscère spécialement mais plutôt le plexus hypogastrique inférieur. Elle entre d'ailleurs, avec les frictions, les vibrations et le pétrissage de l'abdomen, dans le *traitement de la vessie* que Branting, Hartelius et Wide ont perfectionné.

Le traitement périnéal est de moins en moins pratique, parce qu'il peut, chez les jeunes gens, donner naissance à de l'excitation génitale, inconvenient que ne provoquent pas d'autres mouvements qui le suppléent facilement.

Le traitement de la vessie par le rectum emploie un appareil en forme de bâton ou un vibreur mécanique.

Le traitement de la prostate se pratique au moyen de l'index introduit dans le rectum ; il est très fatigant pour le G. D'ailleurs, toutes ces manipulations gagnent à être combinées entre elles.

TRÉPIDATIONS.—VIBRATIONS.—Elles sont d'un emploi très étendu. C'est sur leur principe qu'est basé le "fauteuil trépidant" que Charcot employait dans certaines affections nerveuses. Ce sont elles qui, inconsciemment, forment quelquefois ces cures "miraculeuses" chez des malades pèlerinant en train ou en carriole ! Elles calment le coeur, fluidifient et détachent les mucosités dans les affections catarrhales. Souvent, elles sont pratiquées par des machines : percuteurs, concusseurs, vibreurs, qui donnent des mouvements moins légers, moins fins, moins agréables que la main, mais plus réguliers et plus égaux. Les appareils ne sont employés que dans des cas bien déterminés.

On peut faire vibrer le segment ou le corps dans sa totalité ou bien exercer des vibrations sur un point bien localisé ; ce sont deux mouvements différents.

La trep. du segment.—Jambes, bras—est très fatigante pour le G. et peut être avantageusement remplacée par le pétrissage, le hachement ou la pression des nerfs.

Pourtant, la *trépidation du thorax* est importante dans les affections du coeur et des poumons où elle agit comme le tapotement. Elle sert à calmer l'irritation du coeur, comme les mêmes mouvements appliqués sur le dos. Elle est spécifique contre l'emphysème pulmonaire. A cette trépidation du thorax, on ajoute un soulèvement du thorax, dans le traitement des malades alités et atteints d'affections pulmonaires ou cardiaques. Elle

constitue d'ailleurs le mouvement respiratoire le plus léger que l'on utilise en gymnastique médicale.

Vibration de l'abdomen.—Agit sur les viscères abdominaux et sur le cœur. Elle soulage les douleurs et les coliques et améliore l'appétit. Appliquée sur la région gastrique elle est utile dans la dilatation de l'estomac.

Les vibrations s'appliquent encore au *larynx* et au *pharynx*. Pour ce dernier organe, nous conseillons de ne les laisser exécuter que par les médecins spécialistes en rhinologie.

FRICTION.—La friction présente trois actions différentes : 1^o mécanique, (exemple : friction du colon dans la constipation) ; 2^o réflexe, (friction de l'abdomen qui réveille les péristaltiques) ; 3^o calmante. Ces actions varient suivant l'énergie et la profondeur des manipulations. Elles s'appliquent sur toutes les parties du corps.

Friction de tête.—Termine le hach. mais peut servir indépendamment dans diverses affections nerveuses : migraine, insomnies, etc. Dans certains cas, on la donne extrêmement légère, tellement même qu'elle ne touche plus le patient. Qu'on l'appelle magnétisme, hypnotisme, comme on veut ; le mot signifie peu de chose, puisque le mouvement se montre souvent efficace.

Fr. du cœur.—Accompagne le hach.

Fr. des bras et des jambes.—Se pratique du centre vers la périphérie ; action stimulante et contraction des capillaires cutanés.

Fr. de l'abdomen (de l'intestin, du côlon) rentre dans le traitement du massage du ventre.

Fr. des sphincters—massage anal—traitement du rectum, de l'anus : atonie, hémorroïdes, prolapsus, etc. Il s'y ajoute des vibrations. Peut se pratiquer à l'extérieur ou à l'intérieur. Pour les manipulations internes on emploie un embout spécial. Personnellement ce traitement gymn. après une vingtaine de séances, m'a débarrassé depuis deux ans, d'une fissure à l'anus, extrêmement douloureuse, que l'électrothérapie, (haute fréquence) et d'autres moyens n'avaient améliorée que temporairement. Je conçois très bien que la fissure intersphinctérale qui est presque toujours la manifestation d'une névrite, dont la pathogénie exacte me sera donnée par l'avenir, soit heureusement influencée par des manœuvres qui se montrent si efficaces dans les affections des nerfs.

Fr. des nerfs.—Se pratique avec le bout des doigts, les ongles du pouce, de l'index, etc. Très utile dans les céphalalgies et dans les névralgies de la tête. Sur les autres nerfs les pressions peuvent suppléer aux frictions.

Toutes ces frictions n'ont rien de commun avec l'*effleurage du massage*. Elles se pratiquent dans le sens centrifuge et sur les vêtements et n'ont pas, comme lui une action locale directe sur

le système veineux et lymphatique, mais une action sur les nerfs de la peau.

L'EFFLEURAGE se fait dans le sens centripète, dans le sens de la circulation veineuse. Il est léger et lent. Il est *antiphlogistique* et *anesthésiant* et s'emploie alors dans des lésions aiguës : synovite aiguë, inflammation des parties molles, tissus rouges, tuméfiés, chauds, douloureux, etc. Il peut durer une demi-heure, une heure et même d'avantage.

LA FRICTION DU MASSAGE n'est également que de l'effleurage, mais plus énergique, et peut par conséquent se pratiquer dans les affections chroniques et subaiguës et faire progresser les exsudats ou résorber les produits d'inflammation.

SOULÈVEMENT.—Ne s'applique qu'au thorax et sert de mouvement respiratoire. Utilisé chez les patients faibles, cardiaques ou pulmonaires graves, dans l'emphysème, etc. Il peut être pratiqué unilatéralement dans les affaissements unilatéraux du thorax, consécutifs par exemple aux pleurésies. Dans tous ces mouvements de respiration, des règles très strictes sont édictées pour cadencer et rythmer les deux temps de la respiration d'une manière opportune.

TENSION.—Ne s'applique également qu'au thorax.

Est un très bon mouvement respiratoire et plus efficace que le précédent. Employé dans les déviations de la colonne, les poitrines plates, la coqueluche, etc.

ÉLÉVATION.—S'applique quelquefois aux *suspensions* et confine à la gymnastique pédagogique, mais est encore très utile en gymnastique médicale. Quelquefois le G. aide légèrement le P. en le soutenant soit par les hanches, soit par les jambes, soit en donnant aux pieds un soutien. Est employé comme traitement orthopédique dans les déformations de la colonne, rachitisme, thorax aplati, flexion anormale de la tête, épaules tombantes, etc.

Élévation des bras.—S'exécute dans des positions initiales et dans des directions différentes. Mouvement respiratoire remarquable ; l'inspiration s'effectue pendant que les bras se trouvent au dessus de la tête.

Mouvement correctif du tronc très usité dans les scolioles.

FLEXION—EXTENSION.—Ne doivent pas être pris dans leur sens arthrologique. Comprennent tous les mouvements qu'un segment peut effectuer dans les différents *plans* : flexion, extension, adduction, abduction, flexion de côté, mouvements latéraux, etc., exception faite des rotations et des circumductions. Ils comprennent beaucoup de mts. passifs, mouvements avec résistance et même les mouvements actifs purs comme ceux de la gymnastique pédagogique. Ils n'agissent pas seulement localement sur le segment manipulé, mais encore, comme je l'ai déjà signalé, sur les segments éloignés ; ainsi, des mouvements avec résistance

de *flexion* des bras sont très efficaces contre les déviations vertébrales; dans les scolioses ils sont pratiqués latéralement; les mouvements des jambes agissent sur le bassin et l'abdomen; etc.

D'après la forme générale de ces mouvements, les Suédois leur donnent des noms spéciaux : balancement, bercement, traction, ébranlement, ballottement, battement, etc.

Ainsi, sous le terme de *ringning* (mouvements de cloche) ils font exécuter au tronc un mouvement passif de ballottement, soit latéral, soit antéro-postérieur, très efficace contre l'insomnie. Rappelons-nous d'ailleurs l'action sédative très connue du bercement.

TORSION.—Rotation du segment autour de son axe longitudinal —*torsion du pied* en dedans, prescrit dans le pied plat; torsion en dehors, dans le pied bot. Nous connaissons tous l'action de la *torsion du tronc* sur le thorax et sur l'abdomen; etc.

ROULEMENT.—C'est, comme mouvement passif, la circumduction en gymnastique; très utile, non seulement pour agir sur l'articulation mais encore comme mouvement circulatoire local et général.

Roul. du tronc.—Très usité dans les affections des organes digestifs.

Roul. des bras (dans les affections cardiaques, il faut être prudent et quelquefois ne pas dépasser l'horizontale).

Roul. des jambes.—Comme mouvement circulatoire, s'exécute principalement en dehors.

Roul. des pieds.—Très efficace contre les "pieds froids."

ATTITUDES.—Ne sont pas à proprement parler des mouvements, puisqu'elles constituent des positions spéciales, qui sont conservées et ne changent pas, et pendant lesquelles aucun mouvement n'est exécuté. Utilisées dans les déformations, déviations, etc.

Traitement gymnastique d'une affection cardiaque.

Maintenant que nous sont connus les moyens d'action, les *mouvements-médicaments*, voyons comment ils seront adaptés à un cas déterminé. Je ne choisis ni une affection traumatique, ni une affection orthopédique, parce que leur schéma est extrêmement compliqué, bien que les médecins en soupçonnent assez facilement les principes directeurs.

Je prends un cas simple d'affection cardiaque.

La gymnastique médicale est très efficace dans les lésions cardiaques et possède sur elles une action plus durable que toute autre médication. Pour ces lésions, la gymnastique médicale cherche à alléger le travail du cœur en améliorant la circulation générale; souvent, le meilleur moyen consiste à dégorgé le

système veineux congestionné. Le système suédois possède trois grands groupes de mouvements passifs, qui ont cette action heureuse sur la circulation : le pétrissage, les roulements et les mouvements respiratoires.

Le pétrissage des muscles et les roulements font progresser la circulation dans les segments périphériques ; les mouvements respiratoires le font dans la poitrine et indirectement dans l'abdomen ; sur ce dernier, s'ajoute aussi évidemment l'action du pétrissage abdominal.

Le *pétrissage* des muscles agit mécaniquement et favorise la circulation veineuse non seulement dans les muscles mais dans les espaces intermusculaires et dans les autres parties molles. Le mouvement actif a d'ailleurs la même action et sera employé lorsque l'état du patient le permettra. Au pétrissage des muscles s'ajoute celui du ventre qui favorise la circulation dans les gros troncs veineux de l'abdomen et dans toutes les veines des organes digestifs, qui sont toujours engorgés dans les affections cardiaques. Ce pétrissage abdominal, par son action mécanique, excite les nerfs splanchniques qui, de leur côté, activent et facilitent la circulation artérielle et veineuse du ventre. Les expériences de Levin sont concluantes à ce sujet. Les frictions rapides, qui terminent habituellement le pétrissage, coopèrent au travail circulatoire, en irritant la peau et en amenant une contraction des capillaires cutanés. Les pétrissages que l'on emploie de préférence sont ; le pétrissage des bras, des jambes et le pétrissage du ventre.

Les *roulements*, ai-je dit, sont des mouvements de circulation. En effet, par ces mouvements, les veines subissent des allongements et des raccourcissements successifs et alternatifs. Pendant son allongement, la veine, augmentant de volume, aspire le sang veineux et dégorge les branches périphériques, favorisant la circulation de retour ; le raccourcissement, suivant immédiatement, a pour résultat de diminuer le volume de la veine et de chasser le sang vers le cœur. Ce mouvement de bascule se répète fréquemment et atteint toutes les veines qui sillonnent et embrassent le segment autour de l'articulation mobilisée. A l'épaule et à la hanche même, grâce à certaines aponévroses, cette action s'exerce plus énergiquement. (Braune.)

Les roulements les plus habituels-toujours comme mouvements passifs-sont : roulement des mains, bras, pieds, jambes, tête, tronc et circulaire.

Il y a lieu de ne prescrire aux cardiaques le roulement de tête qu'avec prudence et lorsqu'il a été démontré qu'il supporte facilement les autres mouvements de roulement. Le R. du tronc agit sur les veines caves infér. et sup. Il faut veiller que la flexion en arrière ne s'exagère pas et ne demande pas trop d'effort aux muscles abdom. qui, dans ce cas, gêneraient la respiration.

L'influence de la *respiration* sur la circulation est connue de tous. La respiration sert à hématiser le sang. Le cardiaque,

ayant une circulation difficile, doit donc pratiquer une respiration très complète et profonde, non seulement pendant son traitement, mais en tout autre temps.

L'inspiration, comme une pompe, aspire le sang dans le thorax et agit sur la petite circulation (pulmonaire,) sur la grande circulation (veines caves,) et sur la circulation lymphatique (canal thoracique). De plus, le diaphragme en s'abaissant comprime le contenu de l'abdomen et coopère à faire progresser le sang veineux des gros troncs abdominaux vers le cœur.

Les mouvements respiratoires les plus communs sont : soulèvement et tension du thorax, élévation des bras. Ce dernier mouvement rappelle la respiration artificielle d'après le procédé de Silvester.

On prescrit, en plus, d'autres mouvements passifs qui ont la propriété de calmer le cœur ; soulèvement du thorax avec trépidations, vibrations du dos, etc.

Le *traitement local*, sur la région précordiale, comprend les hachements, tapotements, vibrations et frictions, qui sont calmants ou stimulants, suivant le mouvement et son intensité.

Il y a également lieu de tenir compte de l'influence psychique de ces mouvements. Wide a constaté que les frictions et les vibrations calment la tachycardie de 10 à 20 pulsations par minute, tandis que les hachements et tapotements, au contraire, augmentent le travail cardiaque. Il arrive parfois que certains patients ne supportent pas bien certains mouvements.

Le Dr. Levin a, pendant 10 ans, suivi scientifiquement et cliniquement—tracés sphygmographiques et manométriques—tous ses malades atteints de cardiopathies et a nettement conclu que les pulsations sont diminuées par minute : de 8 à 12 par la vibration, de 9 à 10 par le soulèvement du thorax avec trépidation, de 8 à 10 par le pétrissage de l'abdomen, de 7 par la vibration du dos, etc. Rappelons que Huchard appelait le massage abdominal, " la digitale des doigts."

Tous ces mouvements passifs sont très utiles et sont prescrits en premier lieu. Mais certains *mouvements actifs*, judicieusement choisis et ordonnés, peuvent être indiqués ; tels sont ; flexion et extension des mains, des pieds, des avant-bras, des jambes. Je rappelle que les mouvements des bras doivent être exécutés prudemment et, dans certains cas, ne peuvent pas dépasser l'horizontale. D'ailleurs souvent la gymnastique s'en tient, pour ce segment, au roulement et au pétrissage. Les mouvements de jambes sont souvent très bien supportés, parce qu'ils ne parviennent jamais à gêner la respiration, ce qui, au contraire, arrive souvent, par les mouvements des bras. Ces mouvements des jambes sont " dérivatifs " parce qu'ils attirent, dans ces parties, dans les volumineux muscles en activité, par une vaste dilatation physiologique, une grande quantité de sang qui est " dérivée " des autres parties du corps. Cette action favorable des mouvements des jambes dans les cardiopathies explique pourquoi la cure

de " terrains " attribuée à Oertel, de Munich, dans certains cas de coeur gras ou de névrose cardiaque, a donné quelques résultats, bien que son principe soit d'une autre nature que celui de la gymnastique médicale. Toutefois, je l'estime dangereuse dans la plupart des cardiopathies organiques sérieuses.

N'oublions pas que le muscle qui travaille produit et déverse dans le sang des substances qui ont pour propriété d'exciter le centre respiratoire et, par conséquent, de réagir sur la circulation.

Pour obtenir un résultat durable, le traitement des affections cardiaques doit être quotidien, durer au moins une heure et se pratiquer au moins pendant trois mois.

Beaucoup de cardiopathies relèvent de la gymnastique médicale, principalement les affections de la fibre musculaire les lésions valvulaires, les affections non compensées, la dilatation cardiaque, etc. Evidemment, cette thérapeutique ne débarrassera pas le patient de la lésion valvulaire elle-même, mais elle améliorera très rapidement les symptômes les plus graves : palpitations, dyspnée, cyanose, oedème, douleurs, angoisses, etc. Quelquefois, il est même nécessaire de recommencer le traitement à plusieurs reprises, mais n'oublions pas que ces affections sont essentiellement chroniques et qu'aucune autre médication ne donne d'aussi bons résultats. Les Drs. Kleen et Wide citeraient de nombreux patients qui, depuis des années, suivent ce traitement, sans lequel, au lieu de rester des hommes encore actifs, ils auraient été condamnés à la chaise-longue ou au lit.

Voici un type de schéma de traitement pour une affection valvulaire de gravité moyenne :

- (I.) pos. assise.—Soulèvement du thorax.
- (II.) pos. demi-couchée.—Roulement des pieds.
- (III.) pos. assise. Bs. lat.—Pétrissage des bras.
- (IV.) pos. à califourchon.—Roulement circulaire du tronc.
- (V.) pos. demi-couchée.—Pétrissage des jambes.
- (VI.) pos. id. id. —Soulèvement thorax avec trépidations ou pos. debout appui des bras.—Vibrations du dos.
- (VII.) pos. demi-couchée.—Roulement des jambes.
- (VIII.) id. id. id. —Pétrissage du ventre.
- (IX.) id. id. id. —Vibration et friction région précordiale.
- (X.) pos. assise.—Soulèvement du thorax.

Ce dernier mouvement est prescrit au commencement et à la fin, et s'intercalé très fréquemment dans le schéma et même après chaque mouvement, si c'est nécessaire.

* * * * *

Les indications de la gymnastique médicale sont extrêmement nombreuses. " Depuis plus de 60 ans,—dit Lagrange,—de

“ nombreux médecins-gymnastes appliquent dans des ‘ Instituts ’
 “ publics ou privés le traitement gymnastique à des malades que
 “ nous soignons en France,—sans le moindre succès, du reste,—
 “ par l’immobilisation. Le domaine de la gymnastique médicale,
 “ qui est, chez nous, très limité, s’étend là-bas à presque toutes
 “ les maladies, tant internes qu’externes. Non seulement les
 “ déviations de la colonne vertébrale et les maladies des articula-
 “ tions, mais aussi les affections de la poitrine, du coeur, de
 “ l’estomac, les maladies du système nerveux, de l’utérus et même
 “ les maladies de la peau, ont été soignées avec succès par la
 “ gymnastique suédoise.”

La gymnastique médicale a, pour chaque maladie et pour chaque symptôme, son médicament-mouvement, son procédé thérapeutique. Elle est indiquée non seulement dans les maladies chroniques et subaiguës, mais même dans un grand nombre de maladies aiguës et son domaine de contre-indications se rétrécit de jour en jour. Ses contre-indications sont bien connues des praticiens spécialisés, mais nous avons vu des médecins compétents et habiles l’employer et la prescrire avec succès dans des affections aiguës, fébriles et infectieuses, où, à priori, on la croirait contre-indiquée ou dangereuse ; rhumatisme aigu, synovite et arthrite blennorrhagiques aiguës, plaies turgides et infectées, fractures exposées, etc.

J’ai rappelé ailleurs que le Dr. Cyriax, de Londres, déjà en 1910, écrivait qu’il traitait, suivant la méthode de Kellgren, les plaies septiques par le schéma suivant : vibrations et mobilisation de la peau, friction des nerfs profonds et superficiels, pétrissage et mobilisation passive et active suivant les besoins.

Pour établir sa “ *prescription médicale*,” son schéma, le médecin-gymnaste ne considère pas seulement l’entité de la maladie mais encore le malade lui-même : son âge, ses forces, sa constitution, son métier, ses conditions d’existence, etc. De plus, cette prescription variera en suivant l’évolution des symptômes et de la maladie. Les mouvements de cette prescription sont minutieusement choisis et se suivent dans un ordre judicieux. On ne peut fixer à l’avance un schéma systématique ; ici, comme en thérapie chimique, le sujet réagit d’une façon personnelle. Il y a, entre tous ces moyens, une progression. Nous l’avons vue pour les hachements, tapetements, percussions. La progression utilise encore la vitesse, la durée, le nombre, le rythme, la difficulté et la combinaison qui peuvent varier pour les mouvements et pour les séances.

De même, les mouvements doivent se suivre dans un ordre déterminé. Souvent, il faut éviter que plusieurs Mts. agissant sur une même partie du corps ne se suivent immédiatement. Une séance doit toujours commencer et se terminer par un exercice respiratoire. Il faut introduire, au cours de la séance, autant de mouvements respiratoires et de mouvements dérivatifs, que l’état du patient l’exige. Pendant le cours du traitement, si le genre des mouvements employés ne donne pas le résultat attendu,

ici, comme en toute thérapeutique, il est utile de changer les mouvements. Le gymnaste doit apporter un soin, tout particulier à la respiration de son patient, pendant les exercices, et indiquer, pour chacun d'eux, le rythme, la cadence et la place des deux temps de la respiration. Il doit surveiller sa respiration propre pour éviter un surcroît de fatigue. La première séance ne comportera que six à huit mouvements, plus tard une séance peu comprendre dix et même douze mouvements. Pour agir efficacement, il faut que la leçon soit exécutée sans précipitation ; que le gymnaste et le patient "prennent leur temps." Le patient doit se présenter au traitement, quelques minutes avant l'heure indiquée, pour être calme, sans essoufflement, sans sudation exagérée.

Après chaque mouvement ou chaque groupe de mouvements, il est accordé cinq minutes de repos, pour permettre de récupérer le plus de force possible pour les mouvements suivants. Un certain degré de fatigue, loin d'être condamnable, est quelquefois utile et physiologique. Le gymnaste évitera pourtant d'atteindre un degré inaccoutumé de fatigue chez son client.

Le traitement ne peut pas être donné au patient étant tout à fait à jeûn, ni immédiatement après son repas. Contrairement à la gymnastique pédagogique, la gymnastique médicale ne nécessite pas de vêtements spéciaux. Pendant le traitement, gymnaste et patient doivent être attentifs exclusivement à ce qu'ils font ; pas de conversation inutile, pas de distractions qui, dans certaines lésions soit inflammatoires, soit douloureuses, soit traumatiques, pourraient devenir extrêmement funestes.

De plus, le médecin-gymnaste doit travailler avec tranquillité et régulièrement, porter dans son travail et dans sa personne de la vie, du goût, une certaine vitesse et une bonne humeur très communicative. C'est ce qui frappe les étrangers qui visitent les instituts suédois.

* * * * *

Cette gymnastique avec une certaine variante peut encore s'appliquer aux individus qui ne sont pas "malades" à proprement parler : les sédentaires, les convalescents, les faibles, les surmenés, qui ne peuvent pas ou ne veulent pas s'adonner à la gymnastique pédagogique. Dans ce cas, la gymnastique médicale devient une gymnastique *diététique* et *hygiénique*. Elle est évidemment préférable à tous les exercices hygiéniques que le médecin recommande souvent, sans en connaître toujours l'analyse et les inconvénients, et sans en donner une prescription bien nette et bien dosée : jeux et sports divers qui exigent quelquefois beaucoup de temps et d'argent, qu'il est très difficile de doser exactement, qui sont parfois unilatéraux et déformants, quelquefois insuffisants, malgré l'engouement du public et des médecins.

Nous voudrions voir le Service de Santé Militaire créer et organiser, dans une de ses formations sanitaires en Belgique, un

centre de gymnastique médicale, après avoir fait donner préalablement, en Suède, à de jeunes médecins, un enseignement complet de gymnastique.

La Belgique militaire aurait ainsi l'honneur d'avoir la première en dehors des pays scandinaves, introduit officiellement la gymnastique médicale suédoise, comme elle introduisit la gymnastique pédagogique dans son armée et dans ses écoles, grâce à l'impulsion énergique, tenace et intelligente du Colonel Lefébure.

THE TREATMENT OF WOUNDS BY CONTINUOUS BATH.

BY MAJOR LINDSAY SANDES, M.A., M.D., S.A.M.C.

This treatment is by no means new. Before the present war the Germans, among their therapeutic measures for diseases of the skin, had erected an installation for continuous immersion at Hamburg. Again, in England, at the Cambridge Military Hospital, a series of 4 baths was erected for the treatment of battle casualties.

In May, 1917, we completed at Richmond our series of 6 baths, and when the tests of mechanical efficiency were satisfactory, at once brought them into use. Of their value in suitably selected cases—and their suitability seems in proportion to the extent, severity and septicity of the wounds—we at the South African Hospital are convinced.

In the limited time at my disposal I shall briefly outline the structure of the baths, the mechanism controlling the flow of water of a constant homogeneous temperature, and some of the advantages and faults of this line of treatment, acquired by about 10 months' experience of its use.

Our series consist of a range of extra wide and deep, fire clay, enamelled baths 5' 6"—6' 0" long inside, each fitted with ordinary hot and cold supplies, and waste pipe at the foot end. In addition there are 4—6 inlets at the sides near the bottom for admission of the continuous flow of temperature—regulated hot, or tepid water controlled by a valve with index dial.

Two or three overflows are provided each with a waste and plug, thus regulating the level of the water to accommodate the patient.

Hot and cold water are laid on in the usual manner. Hot or tepid water only to the continuous feed inlets at the bottom of the bath. Hot water is generated in a boiler connected to a storage hot water cylinder with flow and return mains. This storage cylinder is again connected to two cylinders so arranged that as soon as the desired temperature is obtained in No. 1 cylinder a thermometer which controls all operations switches in electric gear, operating a 3-way valve, passing the water to No. 2 cylinder.

No. 2 cylinder, being a sort of side track, contains water at a temperature considerably lower than that in No. 1 cylinder. The hot water, therefore, from the storage cylinder mixes with the cooler supply in No. 2 cylinder, and this mixed and cooler water is passed on through a separate pipe to No. 1 cylinder. When the temperature in No. 1 falls about 1 deg.—2 deg., the original

direct connection between the hot water storage cylinder and No. 1 cylinder is once more re-established by the regulating thermometer and the 3-way valve; the supply then tends to increase in temperature again. Thus, there is a slow uniform fluctuation of the temperature of the water supplied to the bath of about $\frac{1}{2}$ deg.—1 deg. on each side of a mean temperature of about 99 degs.

Thermostats record and chart the temperatures of the different supplies and that distributed to the baths.

In addition, there is an automatic arrangement of alarm bells to meet any emergency or failure of the mechanism; and in the last resource the patient has means of readily and insistently summoning the attendant.

Since the inception of the baths we have only twice had defects in the working of this system. In both cases, through the frosty weather freezing cold pipes exposed outside, otherwise the mechanism of the system has been extraordinarily satisfactory and worked perfectly as exemplified by any of the charts shown herewith.

Mr. H. A. McFerran, Chief Engineer to H.M. Office of Works, designed and erected our plant.

Before the arrival of the patient the bath is filled. A canvas hammock or cradle is placed in the water. This is adjustable by means of straps and buckles, which hang over the side and fix to the floor, to the required depth and position for the comfort of the patient and convenience in attending his wounds. The canvas cradle has apertures to allow the free circulation of the water. On this a sheet is placed. This is a softer support. It requires occasional changing, as otherwise it accumulates the purulent discharges on its surface.

The patient is lifted straight into the water. Irrigation tubes of the type and system devised by Carel are adjusted. These are then connected to the continuous hot water supply main by a rubber tube and controlled by a small tap.

It is advisable, before admission to the baths under a general anæsthetic, to thoroughly explore and expose every sinus and pocket of the wound or wounds, and to affix the irrigation tubes so as not to allow the accumulation of secretion in any crevice, and so that the water may sweep all the infected surfaces. He is now covered by boarding fitting in sections over the top of the bath; on this a canvas cover is placed, a blanket and a quilt.

His shoulders project above the water, and he reclines against a water pillow at a comfortable angle. The arms, unless they require immersion, rest, as a rule, on the outer surface of the bath cover. He can usually wear some form of protection about his neck and shoulders.

Thus, in a semi-reclining position, with all he is likely to want—papers, books, tobacco, jig-saw puzzles, &c.—within easy reach on the surface of the bath, he passes, as a rule, fairly happily the tedium of the worst part of his convalescence.

A word or two as to the advantages and objections to this method of treatment :—

No dressings are required. In an exhausted patient, the daily pain and shock of removing layers of gauze, wool and bandages, in washing, cleaning and recovering extensive wounds are factors of considerable moment in depressing the mentality, the physical condition and in general in retarding recovery. Severely wounded patients have stated they can hardly sleep at night anticipating the torture of the dressings of the succeeding morning. Here, beyond the occasional adjustment of a slipped tube, broken and aching limbs are not disturbed often for 3 or 4 days at a time. Again, the economy of dressings is a material consideration, and should be balanced against the initial cost of the baths.

The wounds are kept constantly clean. They are soon covered with granulations. There is little or no absorption. The patients' spirits begin to rise, his temperature and pulse rate to fall, and after the first night (when the apprehension induced by immersion in a strange medium may render him restless) he sleeps well. (See graph representing the combined charts of the last 40 patients who have passed through the bath ward.) His appetite presently returns, he takes an interest in his surroundings, and the journey on the road to recovery is definitely inaugurated.

There is a great saving of time. It takes a medical officer or skilled nurse and an assistant half an hour at least to attend to the wounds of a badly injured septic case, and these are the cases we put in our baths. This helps materially to lighten the work in the general wards.

The buoyancy reduces the weight of the patient by that of the displaced liquid. Thus, he rests extremely lightly on the supporting sheet; this is conducive to great comfort, and bed sores heal with celerity.

Disadvantages.—Some patients never feel at home in the water, though it was originally their native element. This is, however, a rare occurrence. It cannot be combated. They had better be returned to bed.

Again, after about 24—48 hours, complaint is frequently made of pains in the feet and hands if these parts are submerged. This is a dull, boring discomfort, analogous to the pain of pressure on the heels, which worries the bed-ridden. On examining the painful extremities, the skin is sodden, or perhaps raised and crenated. Beyond this, however, there is nothing to be seen. This discomfort is, I believe, due to pressure on the tactile

corpuscles (probably those of Wagner and Meisner, which are superficially disposed and numerous in the hands and feet) by the epithelial cells, distended by the absorption of water. We endeavour to avoid this by raising the feet and hands above the surface of the water, or, if this cannot by nature of the wounds be conveniently done, coating the skin with vaseline or thick grease, or wrapping them up as far as possible in vaselined gauze.

Calcium salts are deposited, particularly about the pubis, if the patient is long immersed and not occasionally washed with soap. I think the local hard water is responsible for this trivial detail.

If the pressure of the water in the irrigation tubes is too great—that is, if the tap on the main is open too much—and one or more of the terminal tubes happens to be inserted in some easily lifted, cellular plane, it is liable to become distended and the infection may be widely spread. The subcutaneous tissue is the most usual site for this complication—a gentle flow in the irrigation tubes is quite sufficient.

The appearance of a widely disseminated postular rash is not uncommon, no doubt due to penetration of water-carried organism into the hair and sweat follicles, cracks or breaches of the skin.

For the same reason, nurses and attendants who manipulate the patients, inserting their hands into the water, are liable to infection. They should wear gloves. We have found it advisable to connect to the irrigation tubes a reservoir of antiseptic (usually cresol), which, controlled by a screw clamp, keeps the surface of the wounds laved with a weak antiseptic solution, diminishes the activities of the pyogenic organisms floating in the water of the bath, and obviates the rashes of the patients and infections of attendants.

Splints offer no trouble. They are employed in the ordinary way. Those made of wood must, of course, be weighted or anchored.

With regard to the emunctories there is no difficulty. To pass water and use the bed pan the large waste pipe is opened—the bath empties in a minute, the bed pan is inserted easily and conveniently under the patient—the covering of the bath is replaced. The temperature of the interior during the period it is devoid of water only falls a few degrees. The refilling of the bath is an equally expeditious process. A debilitated patient micturates in the water without the bath being emptied.

It is necessary to accentuate that successful treatment by continuous bath is, like other forms of success, acquired by the exercise of care and assiduity; this to a large extent depends on personal daily supervision of the medical officer. The arrangements and disposition of the tubing may want alteration—a fresh abscess may require opening, other difficulties and complications may arise from time to time that must be solved by the medical officer himself; similarly the bath-ward should have its own staff of adaptable, intelligent nurses and attendants. With many patients

it is advantageous to alternate 3 or 4 days in the bath with a few days in bed, and to continue and vary these mutations to meet the individual case.

Nature of cases for treatment.—One may repeat that the best cases for the bath are among the severe casualties, and by severe I mean to convey the more septic.

For example, multiple infected gun-shot wounds or those involving the long bones and joints of the extremities.

We have not required to put empyemata of the thorax in the baths, as they seem to be satisfactorily drained and kept clean by ordinary measures. As examples of eminently suitable cases, let me give two.

No. 10818, Private G. R. E. R.——, 2/S.A. Infantry, G.S.W., involving the perineum, tearing up all the soft tissues, cutting the penis and urethra and destroying both testicles. The dressing of this case was a tedious and exceedingly painful task, his groans and cries most pathetic. Once in the bath he was at rest; he remained there 13 days. When removed to bed once more the acutely sensitive parts were greatly reduced in size and coated with a layer of anæsthetic granulations. A fractious, terrorised and emaciated patient had been metamorphosed to a contented and comparatively healthy individual.

L.-Cpl. P. G. ——, No. 6346, 2/S.A. Infantry, G.S.W. Multiple. Right leg amputated by the guillotine operation in France, leaving a painful pyramid of meat. Left hip shattered, and discharging torrents of pus from many sinuses. Left shoulder and humerus similarly disorganised, a large bed sore and huge abscess in the lumbar region. This man, I am of opinion, would have succumbed had it not been for the bath. The continued diffuse and violent sepsis, shock and pain could only have had one result. He is still, while writing this paper, in a somewhat parlous state, but improving with each succeeding day.

It is an excellent subjective testimony that patients who have once been treated in the bath are anxious to return there if a later occasion arises.

Number of cases treated. Average stay.—We have put over 100 seriously wounded cases through the baths, many of them for three or four separate sessions, in about 10 months. The average duration of their stay there was about 7 days.

Expenses of system.—The expense of our system of 6 baths was £700 odd; with some modifications and simplifying of the apparatus the installation could be erected at a cheaper cost.

Number of baths required.—10 baths are sufficient for a hospital of 1,000 beds (i.e., 1 per cent.), taking in recent casualties.

If time permitted it would be of interest to discuss the physical processes and expressions of molecular energy between the constantly immersed unprotected wound surface and the water. In brief, however, it may be fairly stated that there is a continual but diminishing loss of albumen, salts and all constituents of the lymph by filtration, diffusion, and probably in the earlier stages by direct leakage through torn lymphatic vessels and patent cellular spaces. In the contrary direction there is no doubt some small absorption of water by osmotic pressure.

The essential of success in this treatment is the continuous removal of both noxious micro-organisms and the products of their activities, and if a thorough examination of the wounds be first made and the irrigation and drainage system be rationally adjusted, this, I consider, can be obtained with advantage and efficacy by the bath system.

RESULTS OF OPERATIONS ON PERIPHERIC NERVES.

PROFESSOR G. VERGA.

Out of about one thousand cases of peripheric nerve wounds treated at the Neurological Centre of Pavia under the direction of Professor Camillo Golgi, up to the present about 160 have been operated upon, as follows:—

80 *Neurolysis* (25 middle n. ; 28 cubital n. ; 14 radial n. ; 9 sciatic n. ; 3 popliteal external sciatic n. ; 1 cutaneous muscle n.).

63 *Sutures* (17 radial n. ; 18 sciatic n. ; 11 middle n. ; 11 cubital n. ; 6 popliteal external sciatic n.).

3 *Alternate Sutures* (2 cubital n. ; 1 radial n.).

9 *Sutures with plastic*, having peripheral edge (4 radial n. ; 2 sciatic n. ; 2 popliteal external sciatic n. ; 1 cubital n.).

5. *Anastomosis* for peripheral grafting of the radial n. on the middle n.

These cases were undertaken with the incessant collaboration of the neurologist of this institution, Prof. Guido Sala. The latter not only supervised the clinical examination and closely followed the post-operative course of the individual cases, keeping track of the results by means of repeated electro-diagnostics, but also assisted directly at all the operations.

This close collaboration between the neurologist and the surgeon constitutes the special characteristic of our work, and, as such, confers on all the operations we have performed a particularly rigorous scientific character which increases the dependable nature of the results achieved.

It is too soon since the operations were performed and the number of notes is still too limited for us to be able to draw any conclusions of a general nature as regards the results that have been obtained.

The latter are both scientific and practical.

From a scientific point of view the operations that have been performed on the peripheric nerves have supplied the best of proofs of the accuracy of the centralistic theory on the regeneration of the nervous fibre so authoritatively sustained by Perroncito and Ramon y Cajal in the experimental stages. They

have, besides, allowed us to follow with much greater minutiae than could be done on animals the different modalities of the renewal of the organs of the severed nerves, and to decide as to the laws that determine the manner in which the clinical symptoms of the regenerating process declare themselves with regard to the motility, to the objective sensibility and to the electrical reaction. Moreover, they have enabled us, by means of the direct electrical excitement of the uncovered nerves, to make the clinical observation of the most delicate localisation of the topography of the nervous centres. Finally, they have supplied us with rich anatomical-pathological material wherewith to investigate the nervous scars due to wounds caused by firearms.

From a practical point of view, the operations have already resulted in a satisfactory number of complete recoveries and improvements, even of those extremely serious cases, that had resisted all kinds of physical therapeutical treatment.

By limiting ourselves to the sole consideration of the 82 cases that were operated upon some time ago, and of which the post-operative course was followed for a period long enough to enable us to express an opinion as to the achieved results, we may be said to have obtained, out of 82 cases, 43 recoveries (52.4 per cent.); 31 improvements (37.8 per cent.); and 8 negative results (9.7 per cent.).

The negative results occurred in connection with cases that were complicated by grave osteo-articular and muscular alterations; however, even in these cases, although remaining without result as regards the function of the nerve, the operation caused no inconvenience to the patient; on the contrary, it enabled us more than once contemporaneously to correct a concomitant deformity.

Complete recovery, with total re-integration of the nerve and of its function, were verified and controlled by repeated electro-diagnostic examinations, not only in cases of neurolisis, but in those of direct suture, often preceded by the re-sectioning of pseudo-neuromics or by cicatrisable tracts of the nerve centre.

The most particularly favourable results have been given by the radial n. and by the sciatic n.

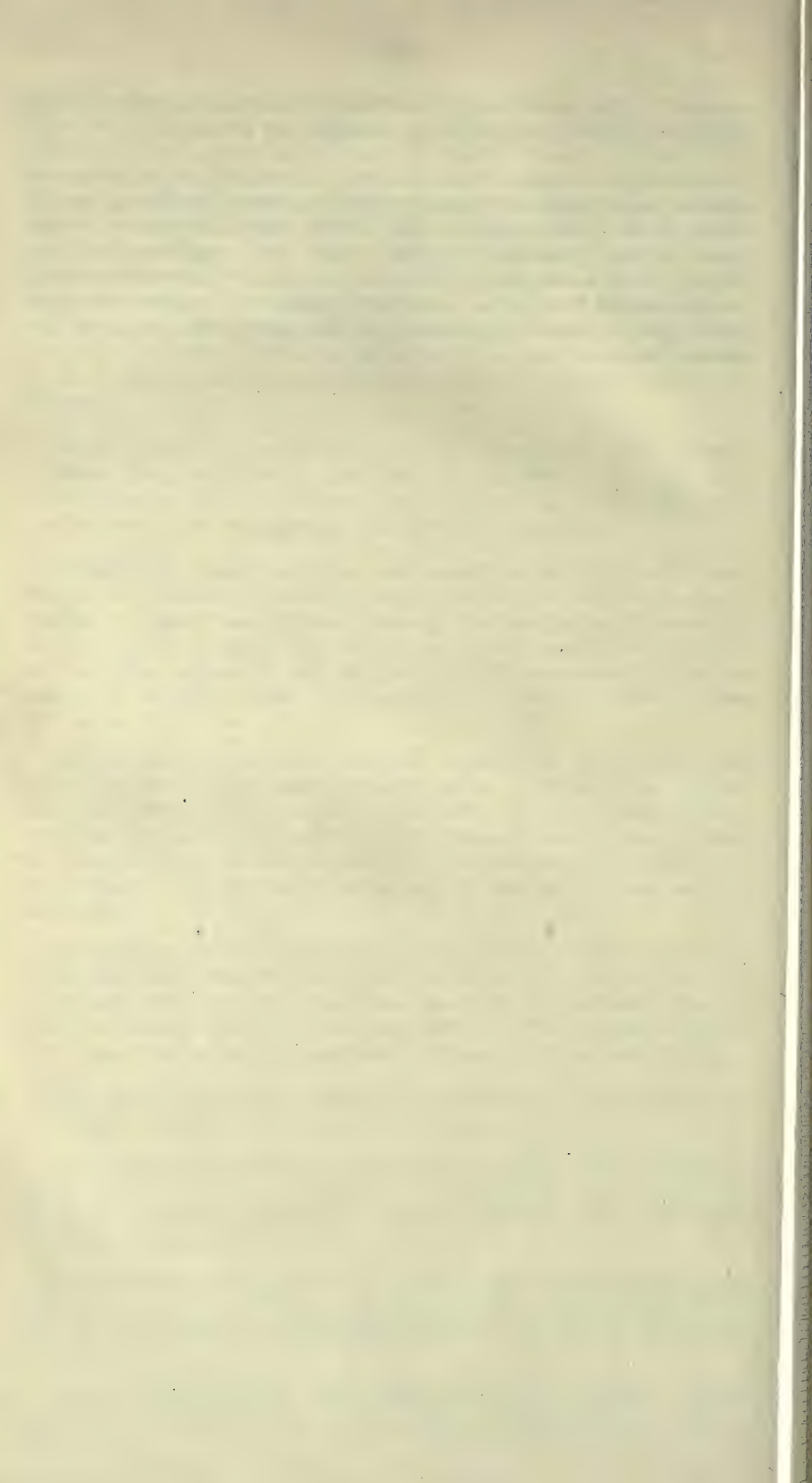
No complete recoveries were obtained, only simple improvement, and sometimes only negative results, from the intervention of other modalities (alternate sutures, plastics with peripheric edge, anastomosis, &c.).

In two cases of grafting the peripheric root of the radial n. to the centre of the middle n., we obtained only the renewal of the function performed by the radial muscles, not that of the finger extensors.

For this reason we are still confronted by the problem: What is it best to do in cases of ample diastasis of the nervous stumps

where it is not possible to attack the roots so as to proceed with the direct suture even by giving a special set to the limb?

The length of time that has been necessary for the organic renewal as a result of neurorrhaphy has varied according to the depth of the wound, and its date, to the size of the nerve, to the more or less satisfactory general and local conditions of the patient; but it has always been for a period of several months, sometimes for over a year, and this because of the slowness with which the process of regeneration of the nerves takes place in the human body.



APPENDIX.

THE CANADIAN PENSIONS ADMINISTRATION.

By Major HUME BLAKE, formerly Vice-President of the Pensions' and Claims' Board, O.M.F.C.

Canada recognizes, as do most nations, that the rehabilitation of the disabled soldier and his replacement in civil life in, as far as possible, an independent position and comfortable circumstances, is a national obligation.

He is not to be allowed to become an object for charity or private benevolence. The State must do its utmost for him, not only in his own, but in the national interest. He, on his part, has the reciprocal obligation to become, within the limits of his capacity, a useful and self-supporting citizen; this also in his own as well as the national interest.

Among the measures adopted for the fulfilment of this national responsibility, the provision of pensions, because of its concrete and definite nature, is, in Canada as elsewhere, popularly regarded as much the most important. Considered opinion, of course, realises that it is a part only of the many-sided and complex problems which confronts the legislator and administrator in this connection, and that of at least equal importance are the measures concerned with:—

First.—The provision of all that medical science can do, by treatment, by the supplying of artificial limbs and other appliances, and by functional re-education, to remove the disablement or bring it to, and keep it at, an “irreducible minimum.”

Second.—The provision of vocational training, to the end that, after medical science has done its utmost, if the disabled man is still incapable of carrying on his former occupation, he may fit himself for other work of an appropriate nature.

Third.—The provision of employment of a suitable kind, in order that the disabled man may become, to the extent of his capacity, a useful member of the community.

Although not in every particular clearly laid down in existing Canadian Pension Regulations, the following may be said to be the fundamental principles upon which the administration of pensions for Canadians serving in the present war is based:—

(1) A pension is the discharge of part of the national obligation to a member of the forces disabled or killed in this war. It is the payment of a debt by the State, in consideration of service rendered, and as a compensation for disability or death. It is in no sense either a benevolence or a reward for length or quality of service. It is intended to ensure a satisfactory standard of sub-

sistence, or in other words "decent comfort," to the pensioner and his dependents. For that reason, its amount should vary as the purchasing power of money changes. In Canada, the usual wage of an average man of military age and ordinary training, is sufficient to ensure "decent comfort" for himself and those dependent on him. The compensation for total disability should therefore equal the earnings of the average working man. For partial disability the compensation should equal the pensioner's percentage of incapacity, and with his remaining capacity will provide "decent comfort." No account is taken of previous occupation, income, or condition in life. Canadian public opinion favours equal compensation for equal disablement. There is therefore no provision, like the alternative pension of Great Britain, for compensation for economic loss occasioned by enlistment or service. Canadian pensions vary according to rank, but there is, or at any rate was, a movement, strong in Western Canada where democratic ideals prevail, to make pensions for equal cause the same for all ranks.

(2) Pension is awarded to a disabled member of the forces in direct proportion to the extent of any disability, which became apparent during, or was due to, the naval or military service of such member.

(3) Pension is awarded to certain dependents of a member of the forces who has been killed, or has died, when death occurred during, or was due to, the naval or military service of such member.

Theoretically, pensions are War Risk Insurance. In war as in civil life the individual should bear the ordinary risks of existence for himself, and the State should only compensate for disability or death due to war risk. In practice, the difficulty of determining with certainty, what is, and what is not, due to war risk, is so great as to make that ideal impossible.

It has therefore resulted that the tendency of Canadian Pensions Administration, like that of Great Britain and other countries, has been to make the State compensate for death or disability occurring or becoming apparent during service from risks of any sort, excepting only those of wilful misconduct. The recognition of the necessity for some measure of Health Insurance in modern social organisation has probably helped to induce this change.

(4) Disability or death, found to have been due to the aggravation during service of a condition which pre-existed enlistment, is pensionable as if wholly due to service when

- (a) the pre-existing condition was neither apparent nor wilfully concealed at enlistment, and did not become apparent for a reasonable time thereafter: or
- (b) the pre-existing condition, though apparent at enlistment, was then considered to be negligible.

(5) Disability found to have been due to the aggravation of a condition which pre-existed enlistment and was wilfully concealed, or which, being apparent at enlistment, was then considered sufficiently serious to prevent enrolment for general service, is only pensionable to the extent of the aggravation during service.

Canadian public opinion favours pensioning the entire disability existing at discharge, including that proportion which pre-existed enlistment, unless the latter was either wilfully concealed or clearly apparent at enlistment.

(6) When disability or death was due to intemperance or improper conduct, pension is not awarded unless dependency exists and the circumstances are exceptional.

The words "intemperance" and "improper conduct" have not been defined. In practice they are considered to mean the persistence in (and not merely an isolated instance of) intemperance, vicious or criminal conduct.

It may be stated that the trend of Canadian opinion is towards pensioning for death or disability, even though due to misconduct, and especially if dependency exists.

On the other hand it is interesting to note that in the United States, under the War Risk Insurance Act, pensions are payable for death or disability suffered or contracted "in the line of duty," and it is stated that up to the present time these words have been so strictly construed that no pensions have been paid for death or disability occurring during leave, even though the result of an enemy act.

It should also be noted that while Canada, like most countries, gives free protection by pension to certain dependents, restricted according to their relationship and need, she has not yet decided to afford relief to her disabled men from the increased cost of Life and Accident Insurance occasioned by their enlistment and disabilities.

(7) In considering each case a medical estimate of the extent of incapacity to earn a livelihood in the untrained labour market is made. This is based, as far as possible, on a Table of Disabilities prepared and revised from time to time, in accordance with actual experience, by the Canadian Pensions Administration. In establishing disability, previous or existing occupation and income are not considered, only the injury to the human machine and the resulting incapacity for ordinary labour being taken into account. No reduction of pension is made because industry or some special aptitude enables a disabled man to earn a good living, nor is pension increased because a disability specially incapacitates for particular work.

Disability pensions are awarded in direct proportion to the extent of the resulting incapacity for ordinary labour. There

are 20 classes, ranging with 5 per cent. intervals, from total to 5 per cent. The pension payable to a totally disabled man of the lowest rank is \$50.00 monthly. If married he receives in addition an allowance of \$8.00 monthly for his wife and a like amount for each child not over 16 years of age, if a boy, or 17 years of age, if a girl. Moreover, if so helpless as to require constant attendance, he may be granted a further allowance of not more than \$25.00 monthly.

A partially disabled man is classified in accordance with the percentage of his incapacity, and if married, receives proportionate additional allowances for his wife and children. Those disabled to a smaller degree than 5 per cent. may receive a single payment not exceeding \$100.00.

The allowance for a child may be continued until the age of 21 if, owing to mental or physical infirmity, the child is unable to earn a living.

Step-children, adopted children, and illegitimate children are pensionable if the relationship had existed at the time of the appearance of the disability.

In case of death, pensions for dependents are provided as follows:—

- (a) The widow, if she was married to deceased at the time his disability was incurred or aggravated, receives \$40.00 monthly until she re-marries, when she becomes entitled to a gratuity equal to one year's pension.
- (b) The children of deceased, if boys not over 16 years old, or girls, not over 17 years old, each receive \$8.00 monthly, or if they are orphans, \$16.00 monthly. A child's pension may be continued until the age of twenty-one, if, owing to mental or physical infirmity, the child is incapable of earning a livelihood.
- (c) The "unmarried widow" of deceased and his illegitimate children may, if the circumstances are such as to make it appear just to do so, be pensioned as above.
- (d) If no widow or pensionable children are left, a parent or person in the place of a parent, wholly or mainly dependent upon deceased, may receive the same pension as the widow would have received, and dependent brothers and sisters are placed in the same position as children would have been.
- (e) If a member of the forces, who has been pensioned in any of the first 5 classes, dies, leaving a widow or "unmarried widow" with whom the relationship had been established at the time of the appearance of the disability, or leaving children by such widow or "unmarried widow," his death is regarded as having been due to his pensionable disability and such widow and children are pensionable accordingly.

Canada also recognises that the national responsibility for the disabled soldier is best undertaken by a Central Administrative Authority controlling executive agencies as required.

To this end, the Canadian Government has quite recently appointed a "Minister of Civil Re-establishment" under whose control are placed all matters in this connection, including the work of the Board of Pension Commissioners for Canada, which has been the Pension Authority of the Dominion since September, 1916.

Since the outbreak of war, and more markedly since the appointment of that Board, great advances have been made in both the liberality and the comprehensiveness of Canadian Pension Regulations.

Without attempting to particularize the changes that have taken place, the following points may be mentioned:—

- (1) The maximum pension payable to a totally disabled man of the lowest rank has been increased from \$22.00 per month for himself, \$11.00 per month for his wife, and \$5.00 per month for each child, to \$50.00 per month for himself, \$8.00 per month for his wife, and \$8.00 per month for each child, and pensions of all the lower ranks, up to and including that of lieutenant, have been increased proportionally.
- (2) The classes in which the extent of disability is estimated have been increased in number from 4 to 20, ranging from 5 per cent. to 100 per cent., thereby ensuring that pension will be much more accurately based on actual disability than was formerly possible.
- (3) The allowances for a wife and children have been extended to apply proportionately to all degrees of disability.
- (4) The pension of the widow of a soldier or sailor of the lowest rank has been increased from \$22.00 per month to \$40.00 per month for herself and from \$5.00 per month to \$8.00 per month for each child, and pensions of widows of all lower ranks, up to and including that of lieutenant, have been increased proportionately.
- (5) Allowances for orphan children have been increased from \$12.00 to \$16.00 per month for each child.

The Board is composed of three Commissioners appointed for 10 years and removable only for cause.

It has exclusive jurisdiction and authority over all matters pertaining to the granting, distribution and administration of pensions. Its Head Office is in Ottawa, and it has established a British Branch at 103, Oxford Street, London. It also has District Offices in about 20 of the larger Canadian cities. Through these branches it keeps in personal touch with pensioners, each one of whom is seen or visited at least once a year. In this way

it is enabled to ensure that pensions are adequate and are being properly expended. It also has power to provide medical attendance and treatment, artificial limbs and appliances, and vocational training, for pensioners, and, in general, to exercise supervision over their welfare.

Payment of pensions is made monthly in advance. At the present time about 25,000 persons are receiving pensions, and it is estimated that the cost for the coming year will be about \$15,000,000.

PROBLEMS AS TO WAR PENSIONS IN ITALY.

BY AVVOCATO GIOVANNI GIURIATI, Major.

I.

The Legal Aspect.

Introduction.

Prior to the war in Libia, no special laws for war pensions existed. The wounded and disabled simply received the normal yearly pension due to every State employee, or to his dependents, consequent on injury or death encountered in or on behalf of State service.*

The *occasion of the service* rendered was absolutely excluded as influencing the right to claim pensions even in doubtful cases.

To the widow of the deceased or, in default, to his children under age, the pension conceded was equal to half of that which would have gone to the disabled man; the same pension was assigned to the parents, orphan brothers and unmarried sisters under age solely in case the deceased had been their *only support*.

In order that the Conference may form an idea as to what these compensations amounted to, it is enough to point out that the maximum pension assured to the soldier was 675 lire (a little under £27 at the normal rate of exchange) a year, while the maximum granted to the widow of a soldier killed in war was lire 202.50 (about £8 at the normal rate of exchange) per annum.

Such was the treatment accorded to our valorous combatants in the African War. But we have since then learnt much from the war in Libia.

The Government appreciated the necessity of guaranteeing the future livelihood of these brave soldiers, and also of alleviating their moral sufferings by securing to them less deplorable pensions. Thus, Italian legislation decided upon Special War Pensions for the first time.†

For infirmities and death encountered on the battlefield, the Law of 1912 decreed an increase of one-fifth on the ordinary special war pensions, but ordered that, as regards men serving both in the Army and Navy, the Act of 1911 was to serve as basis for the legislation in fixing the maximum and minimum

* "Testo Unico." (Collection of all the various laws.) 21st February, 1895

† Art. 1 of the Act of the 23rd June, 1912, No. 667, introduced "privileged war pensions" for officers and men of the Italian Royal Army and Navy fighting in the Italo-Turkish War and in all future military campaigns, fixing a maximum of lire 3,000.

pensions. This Act fixed the maximum pension for the disabled soldier at 1,260 lire (about £50 at the normal rate of exchange), while the pensions due to the widow, to children under age, to parents over fifty years of age or to the widowed mother, to orphan brothers or unmarried sisters under age, were raised in proportion.

These measures hold good, as we shall see, for a few ranks of the services, even during the present war; for others they have been considerably ameliorated. But more recent decrees provide for more liberal treatment in the matter of pensions.

Legal and Moral Aspect.

The sacrifice which the State to-day demands of its citizens whom it calls to arms, the dangers and suffering, and moral and material loss, to which it exposes them, constitute a heavy burden almost beyond human strength to bear. Conditions are fundamentally changed since the times when fighting was a trade, more or less like any other trade, which men engaged in under contract for a given term of years and a given monetary compensation. These were times when any allowance from the Sovereign to his superannuated or wounded soldiers might properly be regarded as an act of grace.

The present titanic conflict, in which the old-world professional armies would appear as pigmy forces, fatally involves the whole strength and resources of the nations in aggression or self-defence.

In these circumstances, from whatever point of view the question may be considered, whether from that of individual or public right, the juridical basis of war pensions is clear.

There are two aspects of the loss and injury incurred by the fighters in war. While one is beyond all possibility of material assessment or compensation, there is another, the more tangible one, for which it is the direct duty of the State to make reparation, as far as possible, by ensuring, in the greatest possible measure, the previous material well-being to the injured man and means of subsistence to the families of the fallen. The duty of the State in this respect is analagous to the insurance of workmen against accident. The workman, like the soldier, is exposed to some degree of necessary danger in the interest of society, which benefits by the results of his labour. Even as regards the contract of location of work, which binds the workman to his employer, there is no essential difference between his case and the soldier's, it being clear that in point of fact he has far less choice in the matter than appears on the surface.

This comparison between the risks of war and workmen's risks raises the point of the relation of cause and effect which must exist between the war and the injury giving rise to claim for compensation.

Italian law in this regard was, until quite recently, unduly rigorous. Even during the war in Lybia the principle was main-

tained that special war pensions were due to soldiers only in cases in which wounds or disablement were occasioned "in a clearly ascertainable manner, from the fatigues, events (incidents) or dangers of service, and when same were contracted by the soldier "in consequence of the exercise of his functions." When, however, the exercise of these same functions was merely *incidental* to the accident causing injury, as often happens in war—the unfortunate man was entitled to no compensation.

The interpretation of the law was not less rigorous than the law itself. Italian jurisprudence of that period abounds in truly painful examples of refusal of pensions in cases in which it is quite clear that war service, if not the only or main cause of injury, was at least an essential condition. A sophistical distinction was made between "special *incidents* of service" and "service in general," and pensions were granted only in those cases when "a specific incident of service" was proved to be the only and direct cause of disablement.

All this severity has by now been mitigated. The new war has demonstrated the necessity of a radical revision of rules. The protracted discomforts of life in the trenches, the arduous daily fatigues, the suppression of nightly rest, the use of ever more powerful and cruel weapons (capable of producing injuries not always immediately developed), the maddening detonations and concussions produced by heavy shells, poison gases, microbes perfidiously diffused—all these novel horrors of modern warfare are capable of causing infirmities of which it would be difficult to prove the origin. It would be iniquitous if, after having exposed our fighting men to such a combination of horrors and dangers, the State were to evade the obligation of assuring them against the consequences that might result therefrom.

A first step towards more equitable legislation was made by the decree of May the 1st, 1916, No. 497, which simplified and expedited enquiries arising from claims. It was established that proceedings to ascertain the dependence of disability or injuries received in the service must be conducted by the State officials; that the approval of the Administrative Council of the regiment, required by the regulation of 1895, could be dispensed with, when no special occasion for demur or doubt existed, that in cases of death from wounds, frost-bite, infectious or skin-disease, the death certificate and declaration by a doctor should suffice.

These facilitations, however, were more a matter of form than a radical reform. No proper attention was given to the question of the merits of the case until the Decree of September 2nd, 1917, No. 1385, which in its first article disposes: "To the effects of the granting of war pensions, all wounds, injuries, and illnesses, leading to the disablement or death of soldiers on territory declared to be in a state of war, when these have been received or aggravated in the course of service, are presumed to be dependent on the service." Also that: "No pensions will be allowed in cases of fraud or serious disobedience of rules, as in the cases foreseen in paragraph 2 of the Decree of the 1st May,

1916, No. 497." This law, which clearly indicates the admirable progress made, has moreover a double bearing : in the first place, it admits the presumption of dependence on war service, thus doing away with an enormous series of tedious exceptions, and, in the second place, it limits the onus of proof solely to cases where fraud or serious disobedience to rules are suspected.

Furthermore, Article II. of the Decree of the 2nd September, 1917, disposes : " Special war pensions are granted in cases in which the death or disablement of a soldier is caused by accident while on war service, even when occurring beyond the war zone."

In short, while (by virtue of Article I.) the mere fact of service in the war zone is sufficient to justify the required presumption of cause, Article II., which extends the right to compensation to accidents incurred even *beyond the war zone*, requires proof of the connection between cause and effect. Especially in view of the fact that there are many comparatively dangerous forms of service in the war zone and many very dangerous ones outside (*e.g.*, anti-aerial defence of open towns) and also that the men in the fighting zone are presumably the better fit physically, this distinction appears not altogether justifiable and leaves room for yet broader and more equitable revision and reform.

Injuries or infirmities received on war service were classified according to their gravity so as to serve as a basis in determining the amount of pension due. I shall refer briefly to this point, seeing that it is rather a medical than a legal question.

It will suffice to note that in the 1895 Regulation these disabilities were reduced to three categories, of which the first comprised the total incurable loss of sight and the amputation or total loss of two limbs ; the second included twenty-two infirmities, which would gravely hamper without totally incapacitating the disabled man from working ; the third comprised wounds, injuries, or infirmities not included in the preceding categories, but which, nevertheless, rendered the soldier incapable of further service with the forces.

These classifications were revised and improved on later (Decree of the 20th May, 1917, N. 876), when fresh categories of disablement were introduced on " grounds of the degree of inability to undertake profitable work," thus implicitly admitting what was later explicitly affirmed, *i.e.*, that pensions might be paid even to soldiers who had remained in the service or who had retained sufficient ability for a given work.

On the new scale, wounds and infirmities were classified under ten categories ; but of these only the first eight entitled the disabled man to a life annuity.* Those composed in the ninth category can only claim a temporary allowance for a period

* Under the first three categories the maximum pension is paid ; under the successive seven categories respectively—in the measure of 80, 75, 70, 60, 50, 40 and 30 per cent. of the maximum amount. (See Appendix for list of maximum scales.)

varying from three to six years, while those comprised in the tenth are entitled to an allowance for six months only.

The Decree of the 20th May has further determined the basis of classification of functional injuries, stating, among other things, that the "total and permanent loss of organs, limbs, and parts of limbs is regarded as equivalent to the actual loss of the limbs, while the permanent *lessening* of functional power can in no case be regarded as equivalent to such anatomical loss, and is included in one of the categories of minor disabilities."

The general principle of the Civil Code, by which laws are effective solely for the future, was opportunely derogated from in the matter of pensions, in order that the most favourable provision should apply retrospectively. This exception was specified in Article 4 of the Decree of the 2nd September, 1917, Number 1385, which disposes:—

"The Decree of the 20th May, 1917, Number 876, is applicable to cases of disablement attributable to wounds or injuries received before the said Decree came into force only when favourable to the disabled man."

"The same regulation applies to cases of disablement attributable to other causes, when the Administration or Medical Authorities, having examined them, are able to ascertain that such disablement itself is *anterior* to the coming into force of the Decree of the 20th May, 1917 (*i.e.*, the 7th June, 1917)."

This regulation, no doubt, suffers to some extent from the haste with which the reform had to be introduced. The decision that the new classification should apply, in the case of disabilities contracted prior to June the 7th, 1917, *only when more favourable to the disabled man*, implicitly admits that if the old rules happened to be more favourable in any particular case, they should hold good.

It follows from this that soldiers disabled by wounds or disease *after June 7th, 1917*, may receive "less favourable" compensation than their comrades wounded *before* that date, and this represents an anomaly and an injustice which clearly demands, and, I have no doubt, will soon receive re-adjustment.

A clause of considerable importance to the totally-disabled is contained in Article 5 of the Decree of the 20th May, 1917, No. 876, which concerns cases of disablement in which the victim "is compelled to depend on the care and assistance of others." In such cases of more serious infirmity a supplementary pension of lire 150 annually, not transferable, is conceded to the disabled man; this may be doubled in the event of the soldier losing all four limbs, or when several reasons of grave disability are co-existent.

This pension can be revoked when the disabled man is provided with assistance from public institutions, or when he refuses to be housed in one of the aforesaid institutions.

Having glanced at Italian legislation referring to *direct pensions*, let us now briefly examine the question of *indirect* or transferable ones.

The surviving families of soldiers killed in the war are entitled to a pension equal to half of that which the man himself would have received.

The following relatives of soldiers killed in war are entitled (under the law of the 21st February, 1895) to pensions: (1) the widow; (2) the orphans; (3) the father; (4) the mother; (5) brothers and sisters. Reversion of the claim from the widow to the orphans, and from the father to the mother of the deceased soldier was, moreover, allowed in cases in which for some clearly defined reason the parties mentioned had forfeited their claim.

In the course of the present war gaps and incongruities became evident which it was necessary to obviate.

The measures of reforms introduced by the scheme of May the 24th, 1915, are numerous and important.

First of all, consent was given for soldiers to marry by proxy (Decree 24th June, 1915, No. 913), thus enabling them to provide, with full efficacy also for the recognition of illegitimate children (Decree 14th October, 1915).

In this manner, the recognised illegitimate children of soldiers were admitted to the enjoyment of pensions (Decree 12th November, 1916, No. 1598), and altogether more liberal and simple rules were enacted in this respect. The mother of the illegitimate child who had been legally recognised as such, was also recognised as being entitled to a pension. The same right was conceded even to the mothers of soldiers when abandoned by their husbands and, lastly, to soldiers' mothers whose husbands were serving a term of imprisonment (Decree 12th November, 1916, No. 1598).

Some provision was thus made for the support of members of the deceased soldier's family who would otherwise, under the rigorous laws relating to the "next-of-kin" (*ordine di vocazione*), have been excluded from all benefit. Thus the deceased's parents were, under certain clearly-specified circumstances, entitled to take action for maintenance against the pensioned widow, or, in cases in which only the illegitimate children of deceased had prior claim, to demand a certain proportion of the actual pension, while the abandoned mother or children of deceased could claim a part of the pension otherwise due entirely to the father; and, finally, the principle of reversion of a pension from parents to children of deceased was established.

In the case of a pension due to the father (aged over fifty), or blind, to the widowed mother, or orphan minor brothers, or unmarried sisters of deceased, Article 123 of the Law of the 21st February, 1895, made it a condition that deceased should have been their "sole support," while the Decree of the 12th

November, 1916, mitigated this condition with the words "necessary and sole support."

The parents of the deceased soldier are entitled, under the same law, to claim maintenance from the pensioned widow.

The present Minister of Pensions, Signor Bissolati, is now actively and earnestly engaged in correcting the imperfections of these laws.

In the matter of direct pensions, the Minister has proposed the following reforms :—

(1) With regard to the circumstances of the injury causing disablement, that :—

(a) " Wounds, injuries, or maladies, contracted under whatsoever circumstances of time or place, either actually incurred or aggravated while the soldier was on territory declared to be in a state of war, shall be presumed to depend on the service. (Article I.)

(b) " The privileged war pension concerns those whose disablement, or death in the service, has been caused by wounds received or aggravated in the course of war service, *even when occurring outside the war zone.*" (Article II.)

Signor Bissolati further proposes :—

(2) To extend the right to pension to soldiers who have received wounds, injuries, or infirmities during the period of captivity, and to the families of soldiers who have died in the enemy's prisons. (This reform would fill up a grave and inexplicable gap in our legislation) ;

(3) To concede to the totally disabled a supplementary allowance of lire 100 a year in respect of each legitimate, legitimised, or legally recognised natural child under 21 years of age (provided they are unmarried, in the case of girls) who are born or conceived before the date of the granting of the pension ;

(4) To extend to the first three categories of disablement the possibility of obtaining the personal, non-transferable, allowance only assigned to the first category in Article 5 of the Decree of May 20, 1917, for those totally disabled who are dependent on the care of other people.

(5) To regulate in the most equitable manner the assignment of temporary pensions conceded by Article 8 of the Decree of the 20th May, 1917, in cases in which the military medical authorities cannot pronounce definitely on the degree of the gravity of the infirmity.

As regards *indirect pensions*, the changes proposed by Signor Bissolati strike deeper and are more far-reaching ; they can be summed up as follows :—

I. The recognition of the claim to pension (to the extent of one-third of the maximum) on the part of indigent parents of deceased soldiers, notwithstanding pensions already paid to the widow or children; the concession of pensions to ascendant and collateral relatives who were not in the indigent condition required by the law at the time of the soldier's death, but only became so afterwards; extension of the right to the grandfather and grandmother in default of others having a prior claim; a more liberal estimate of the definition of the condition of "indigence" for the purpose of such claims.

II. Recognition of the principle that, in the case of the death of one of the parents, the surviving parent should be entitled to receive the entire pension. This to apply also in the case of the death of one of the brothers or sisters or one of the grandparents.

III. The concession to parents who have lost several sons in the war of a supplementary allowance in respect of each subsequent son who has fallen in battle after the first.

IV. Recognition of the claim to receive pension, not only of the unmarried mother but also of the natural father and the natural children.

V. A more correct and more humane estimation of certain family ties.*

VI. That parental authorisation should no longer be regarded as an essential condition to matrimony for the purposes of the law on pensions. This reform would hold good in the case of all matters affecting the legal rights or standing of the widow. Indeed, with striking and praiseworthy audacity, the proposed scheme would consider as legally binding even the declaration verbally expressed by a soldier in danger of death.

VII. An increase of widows' pensions in respect of children under age to the extent of lire 150 for each child; an increase, in equal measure, of the orphans' pensions, when there are more than two, even if there be no widow.

VIII. In respect of pensions granted to disabled soldiers and transferable to the widow and children in recognition of the latter's claim in the case of marriages contracted within two years from the date of the granting of the pension, provided the marriage lasted for not less than five years.

* The projected law provides that : The mother of a soldier killed in war who, in consequence of the son's death, is left destitute of adequate means of subsistence shall be admitted to the enjoyment of a war pension, even though unmarried, in cases where, from a cause not imputable to her, she is not living with the man at the time of the son's death. The mother, in such cases, still has a claim to *half the pension*, even in cases when the man, from whom she is living apart (being the natural father of the deceased soldier), is in a position to establish his right to receive a pension.

All comment appears to me unnecessary regarding the above proposals which are characterised by a bold spirit of innovation and liberality beyond all praise.

The Problem considered under its Political and Social Aspects.

The financial burden that will have to be borne by the State with regard to war pensions, independent of contributing institutions, of which we shall speak further on, will be very heavy.

On the 31st March, 1918, the number of privileged war pensions inscribed in the National Life Annuity Debt amounted to 125,724 for a total yearly sum of Lit. 89.588.923,19. But, taking arrears into account, the burden of these pensions already amounts to Lit. 137.067.259 for the current fiscal year.

The anticipated amount of the Army budget, closing 30th June, 1918, is two hundred million It. lire. If, however, we consider the large number of pensions that are awaiting inquiry (on the 31st March they were 79,527), the number of disabled men whose treatment is as yet incompleated, and of the missing soldiers whose fate will probably remain unknown until the end of the war, and bear in mind also the legislative reforms at present pending, it is no exaggeration to foresee that the total debt will in the end be over half a billion solely for the pensions under the Ministry of Pensions. This is without calculating the heavier burden that will be placed on our country if the war be prolonged.

When one remembers that this last figure represents about one-fifth of the total amount of the budget, as quoted prior to the campaign, one certainly cannot accuse the Italian Government of not having faced with great energy and generosity the problem which is herewith submitted to the investigations of the Conference.

The responsibility of the Government and of Society does not end with the payment of pensions. We must allude, however briefly, to the measures that have been taken in addition to the payment of pensions, otherwise the description of these efforts and achievements of a social and political nature would be incomplete.

(a) Pensions represent merely an insurance, a guarantee of the minimum necessary to support life. But the whole life of the disabled men must be taken into account, and, seeing that work, apart from all monetary considerations appertaining to it, is *per se* a fundamental necessity of our being, it is essential to teach our disabled men that there is practically no form of disablement which excludes all possibility of useful occupation, and to console them with the knowledge that they possess much latent and valuable energy. Thus only can these martyrs of war be reconciled to their destiny.

In Italy this noble work is undertaken by the National Institution for the Assistance of the Disabled in War and a large number of private organisations.*

Those measures by which the State ensures remunerative work to the disabled are to be regarded as auxiliary to pensions. Our Treasury recently inaugurated a competition for certain Government posts, reserving for the disabled men the same number of posts as for civilians. Other public administrations have adopted the same system which, we hope, will before long become general.

Moreover, by degrees, as vacancies occur the State reserves for disabled men or for the families of those who have fallen in battle, the retail sale of State monopolies (such as salt, tobacco, &c.), and lottery-receiving offices, which in certain districts are very profitable concerns.

Equally important measures have been taken for the care of war orphans whose protection the State took over under the Act of the 18th July, 1917, No. 1143.

This beneficent law extends assistance not only to the minor (or deficient) orphans, legitimate or recognised illegitimate who have lost either father or mother in consequence of the state of war, but also, under certain definite circumstances, to the unacknowledged illegitimate children. It also extends the benefit to the children of those disabled in war who were conceived prior to the date of the injury which produced the disablement of the father.

Such State protection is exercised through the medium of a National Committee and of Provincial Committees, whose functions are mainly economic, while a specially appointed magistrate, with full powers in the matter, acts as legal guardian and trustee to the orphans.

* The most important of these are the following :—

Ancona.—Marchigiano Committee for the Disabled.

Bologna.—Society for the Aid of the Crippled and Disabled in War, piazza Galvani, 1.

Rome.—Italian Red Cross, 149, via Nazionale.

Florence.—Committee for the After-Care of the Disabled, piazza della Signoria.

Genoa.—Ligurian Committee for the After-Care of the Crippled, Disabled and Blind in War, via Garibaldi, palazzo Municipale.

Milan.—Lombardy Committee for the Disabled in War, via S. Margherita, 24.

Naples.—Neapolitan Committee for the Disabled in War, via Chiatamone, 55.

Palermo.—Sicilian Committee on behalf of the Disabled and Blinded in War, villa Belmonte.

Rome.—Society for the After-Care of Blind and Disabled Soldiers, piazza Cavour, 3.

Turin.—Piedmontese Provincial Committee for After-Care of Workers Disabled in War, via Monte di Pietà, 32.

Florence.—Union of Munition Committees pro Mutilati, piazza della Signoria, 8.

Among the most important committees whose valuable efforts are auxiliary to those of the State, on behalf of the orphans, I should mention the following :—

The first, in point of date as also the foremost, is the National Society for the care of the Orphans of Peasants fallen in war and for the Children of Permanently Disabled Peasants (legally recognised since August, 1916). This Society is under the presidency of Signor Luigi Luzzatti.

Another important society is the National Society for the Civil and Religious Care of War Orphans (legally recognised, 9th November, 1916). This Society carries on its work through the medium of local sub-committees and is presided over by Prince L. Boncompagno.

Its aim is specially to assist orphans belonging to the working classes and to the lower middle classes in town and country.

Other initiatives worthy of note for the assistance to war orphans are the National Confederation on behalf of War Orphans, with head-quarters in Milan, viâ Monforte 26, presided over by Senator Conti, and the War Orphans' Industrial Foundation, recently constituted for collecting the contributions of manufacturers and for helping the various national Aid Societies that already exist and have been organised in this country. This Institution at present has a capital of nine million lire, and by the end of the year this will reach fifteen millions.

Finally, there are numerous other institutions for the purpose of assisting the families of disabled and fallen soldiers. But these are less important organisations due to private initiative and sometimes of a religious or political character; for this reason, I consider it wiser not to speak of them at great length before this Conference.

The Problem considered under its Working Aspect.

1. If there is a subject of which the form of organisation is of substantial importance, it is precisely that of war pensions.

With a very few exceptional cases the war represents a powerful cause of economical loss to the men now engaged in fighting. Professional men have had to abandon their clients; farmers can no longer devote their personal labour to their farms, which is the one way of making the latter remunerative; artisans and commercial men have had to close their workshops and shops; in fact, the arrest of individual earnings or its reduction nearly with everyone. Thus it is that wounded soldiers, on being discharged from the hospitals, badly need the allowances that are theirs, so as to re-arrange their affairs and to provide for their own and for their families' urgent necessities. Every delay means further hardship and sometimes serious loss. To give promptly may, therefore, often be quite as important as to give enough.

“ La forme emporte le fond.”

Unfortunately, the legislative precedents were far from being either adequate or helpful in this matter.

The formalities of the Medical Boards were, and, in part, are still disastrously slow and long-winded. The Italian Health Bureaucracy is a slow and heavy machine, founded on a tiresome system of manifold controls each of which demands delays, experiments, transmissions of documents, documents that cannot always be to hand, given the vicissitudes of war. Wounded soldiers, before beginning the proceedings for obtaining their discharge with pension, have to go through numerous examinations held by Commissions, each of which means journeys, orders and delays. When the advisability of granting the discharge with pension is finally admitted (which often occurs, as in my case, more than two years after the applicant has been wounded), the Medical Board, the Health Director of the Army Corps, and the Health Inspection Bureau must all three give their adhesion to the proposal. Only at this stage of the proceedings are the payments of the pension begun. These proceedings, prior to the constitution of the Ministry of Pensions, were similar to those for the usual civil and military pensions, and were principally based on the *Royal Decree of October 5th, 1862, N. 884, on the jurisdiction and debatable procedure of the Audit Court (Cour des Comptes) of the Kingdom of Italy, modified by the Royal Decree of May 12th, 1864, N. 1777, and by Art. 116 and the following in the Regulations of September 5th, 1895.*

It was a question of a regular written examination, during which the petitioner as well as the Counsel from the Crown were entitled to presenting statements and final decisions in support of their case. Once the examination was concluded, the scheme of payment was made out by the Treasury Auditor, and an official to draw up a report was appointed by the President. The deeds were then transmitted to the Attorney-General for his written decisions, but both parties could (Article 119 of Regulations, September 5th, 1895) "present or have presented to the Court statements or other deeds in support of their petition." All these documents had also to be communicated to the Attorney-General.

Finally, on the date previously chosen by the President, after listening to the report presented by the Delegate Councillor, the decision of the Court was given out in Council.

2. It became evident that all these lengthy proceedings ought to be curtailed, for the very slight economy deriving from them could never compensate for the harm that was caused by such endless delays.

The Decree of August 5th, 1917, N. 1266, was a first step towards this reform. According to Article 2 of this Decree, pensions to widows and orphans of soldiers killed in war were to be granted without the intervention and final decisions of the Attorney-General, with the exception of his right to appeal to the United Sections of the Court, within a period of ninety days

dating from the date of the announcement to the interested party. But an organic reform was only obtained by the constitution of the Ministry of Military Assistance and War Pensions.

This Ministry has been constituted for the duration of the War and for one year after the proclamation of Peace, as per Decree of November 1st, 1917, N. 1812, and its attributions were determined by the Decree of December 6th, 1917, N. 2067.

According to Article I. of this second Decree the new Ministry provides for the parliamentary enquiry, for the actual granting of war pensions, and for the advancing of stated amounts; and in Article II. it is said that :—

With regard to war pension : The Minister exercises all the attributes of the Audit Office and of the Attorney-General with the exception of appeals, as referred to in the following Article III., and of the control of the Court itself with respect to the regulating of payments to be made in execution of the grants made by the Minister.

To this end the Minister is assisted by a committee connected with the Ministry, and having as chairman the Divisional President of the Audit Office, and composed as follows :—

- (a) Four councillors and four referendaries of the Audit Court.
- (b) Two medical officers of high rank belonging one to the Military Board of Health, the other to the Naval Board of Health.
- (c) A Councillor of the Court of Appeal and a Deputy Attorney-General of equal rank.
- (d) Two committee-men appointed by the Minister.

The members of this committee shall be appointed by Royal Decrees, with the approval of the Council of Ministers.

Article III. determines the right of the interested parties to appeal to the Audit Office against the Minister's decisions with regard to payments.

It is hardly necessary to observe that these regulations simplify the proceedings to an enormous extent. It does away with the cross-examination before the Court, the final decisions of the Attorney-General and finally with the latter's' power of appealing to the united divisions of the Court.

The only appeal admitted is the one presented by the petitioner. In addition to this modification there is the further advantage of a group of officials having been appointed for the payment of war pensions, and a special committee for winding up; it will thus be readily understood how, by means of the institution of the Ministry of Pensions, the problem of obtaining rapidity of the proceedings has approached its practical solution.

A few figures will serve as proof of the above :—

The Ministry of Pensions was created on November 1st, 1917, but did not actually start working in a practical way before March 1st, 1918. From November 1st, 1917, to February 28th, 1918, 23,203 pensions were granted. These grants, for the reasons stated above, were still effected by the Audit Office, at a monthly average of 5,800. However, during March, 1918—that is, during the first month of this Ministry's practical existence—no fewer than 15,191 *pensions* were dealt with and granted by the Ministry itself.

If one considers besides that this new organisation was confronted by the numerous legislative reforms, already mentioned in the first part of this report (and any legislative reform invariably causes interruption in office routine, owing to the need of according it a correct interpretation as well as an equitable application—both matters that require a certain amount of time), and that, the work being of an entirely new description, it was some time before a number of the Ministerial employees and officials got familiarised with it, we must admit that the figures just quoted give us the brightest of outlook, and that they fully justify the warm words of praise and approval which the new Minister, the Hon. Bissolati, addressed to his collaborators quite recently.

3. The work of this Ministry is so very heavy, however, that it would not be possible for the Head Office to handle all the cases on the rolls alone. For this reason, the Hon. Bissolati thought to remedy the matter by opening several branches in the provinces, where the pensions are dealt with locally (*see* Circular Letter No. 9, December 11th, 1917). These branches have the following programme, as indicated in the instructions issued to them by the Minister :—

1. To compile and complete the action taken by the Local Municipalities, by getting together all the detailed information with regard to the applications for pensions.
2. To keep the interested parties informed as to the actual developments of the inquiries instituted with regard to their applications, at the Ministry.
3. To provide all legal and medical assistance considered necessary, for the purpose either of vouching for the applications in the regular manner, of appeals against negative decisions, or against decisions granting insufficient sums.

Under each of these three headings, but more especially the first and third, the Minister has given numerous and detailed instructions. According to these, the Provincial Offices must not only provide all the necessary documents that are to accompany the applications for pensions, but they must also supply all the information that was previously obtained, with a consequent great loss of time, from financial institutions, from the military and from the civil police officers.

At a later date (Circular Letter No. 21, 11th February, 1918) the Minister drew up a regular schedule for these Provincial Offices, stating their organisation, aim, attributes, composition and mode of procedure in detail.

Their aims were stated to be the following :—

- (a) To hasten and to co-ordinate all action taken by Local Municipalities, by completing the documentary evidence connected with the applications for pensions.
- (b) To impart to the interested parties all information regarding the actual development of the inquiries that have been instituted at the Ministry of Pensions with reference to their applications.
- (c) To provide, if needed, all legal and medical assistance, either for the regular vouching of application, or in case of appeal against negative decisions, or against decisions conferring insufficient grants.
- (d) To provide assistance to relatives and dependants of the soldiers, who are entitled to daily subsistence in the eventuality of their filing an appeal against the Provincial Commission, or, in the last instance, against the Ministry of Pensions.
- (e) To receive the demands for these special subsidies, and to see to their being forwarded to the Ministry.
- (f) To aid, in so far as will be stated for each individual case, the execution and furtherance of all action which the Ministry of Pensions may deem it advisable to take in the provinces within the limits of its attributes.

The Provincial Offices are under the management of a Board of Directors and of an Executive Board. The latter is especially entrusted with the collecting of information, furthering inquiries, drawing up applications for the interested parties. On the other hand, the Board of Directors has the casting vote in all doubtful cases, and is there to express an opinion whenever the Executive Board decides to refuse the grant of a stated pension.

At the time of writing this Report, these Provincial Offices are being organised in all the provinces of the Kingdom.

4. All these measures refer only to one aspect of the fundamental problem. There is the first part of the proceedings, which refers to the verifications of the Health Authorities, that presents, as we have seen already, many serious obstacles and gives rise to grave delays. Fortunately, with regard to this, radical reforms are in process of being effected here in Italy.

As far as my information goes in the matter, by order of the Ministry of War there will be constituted in all the principal military hospitals and other health institutions that may appear suitable for the purpose, a Medical Board having exclusively the task of pronouncing decisions of a medico-legal nature. Once the medical examination completed, and all experiments connected with it have been made, this Board will give their decision,

which will be immediately communicated to the interested party. The latter is allowed a period of seven days in which to lodge, or not, an appeal.

In the event of his accepting unconditionally and of the Board's verdict being that the man before them is unfit for further military duties, all documents referring to the case are *forwarded immediately* to the Ministry of Pensions, without any delay, together with the application for the immediate grant of the relative pension.

Should, however, the interested party refuse to accept the decision of the Board, the relative documents are transmitted to the *Health Commission for Appeals*, to be found in each Territorial Army Corps, in the bureaux of all Port Authorities, and in the Territorial Division of Cagliari. These Commissions of Appeal are to be presided over by the Director of the Board of Health, who will have under him four medical practitioners, two of whom belong to the Army, and two civilian physicians. One of the latter will be nominated by mutual agreement of the Ministry of Pensions and the National Association for Disabled Soldiers and Sailors; the other civilian doctor will be appointed by the local Provincial Office for Military Assistance. These Commissions can base their verdict on the sole evidence of the documents presented, but they are authorised to order the institution of fresh inquiries on the part of the Medical Board, and also are empowered to start investigations on their own account.

If it results that the Commission of Appeals decrees the granting of the pension under discussion, the relative papers are at once transmitted to the Ministry of Pensions for the prompt settlement of this same pension.

By thus suppressing two lines of control, and by allowing a representative of the interested party to assist at the meetings of the Commission of Appeal for the purpose of investigating the doubtful cases, this reform accomplishes the double aim of accelerating the proceedings and of ensuring complete equity and impartiality of decision. The enormous advantage to be gained from such results is so entirely obvious that we may hope to see the Italian Government effecting this reform without delay.

But a certain lapse of time will have to pass before these reforms are put into operation, and, in the meanwhile, it will be necessary to supply the disabled men and their families with funds where-withal to live.

In this respect, Article 133 of the Regulations, 5th September, 1895, No. 603, states that: "To those who are entitled to pensions or other Government grants, a monthly allowance may be allowed by permission of the Ministry of the Treasury, on the proposal of the Attorney-General of the Audit Offices, during the period of time required for the final settlement of their application, said sum to be withheld from the total amount due to them." In this article it is further stated that this monthly advance must

not exceed two-thirds of the amount of the pension or of the allowance to which the disabled men are finally entitled.

The conditions stated in this article were further extended to the widows and orphans of soldiers killed in battle or having died of wounds received in the field, by Royal Decree, No. 1103, 27th June, 1915; the amount of the advance not to exceed four-fifths of their eventual pension.

But in the Fourth Article of this same Royal Decree there was a stipulation requiring the presentation of a series of documents of such a complicated, and often impossible nature, that it defeated its own object in many cases, and rendered the benefit to be received wholly illusory. With a view of remedying this state of affairs, a further Royal Decree, No. 1324, 22nd August, 1915, was emanated for the avowed purpose of "simplifying the formalities for applicants" demanding advances on pensions, and "to facilitate for widows and orphans the reception of the afore-said amounts." This Decree states that it will be sufficient to present the document announcing the soldier's demise, instead of the regular death certificate heretofore required, and it also greatly simplifies the wording and contents of other documents that are to be issued by the Syndic (or Mayor).

Finally, at a later date, the Royal Decree, No. 1598, 12th November, 1916, further extended this right of widows and orphans "of soldiers deceased in consequence of illness or accident occurred whilst on duty, or as a result of frozen limbs, malaria, cholera, hyleo-typhus, exanthematic typhus or cerebro-spinal meningitis of an epidemic character" (Article 20), as also "to the parents, or to the brothers or unmarried sisters, during their minority, of soldiers fallen in battle." For these latter cases, the amount of the advance may not exceed three-fifths of the probable pension.

It is to hoped, however, that also with regard to this question of the advanced sums there will soon be a thorough revision of the regulations connected with it, so as to do away with a great deal of arbitrary, and often most dangerous, casuistry.

6. With a view of completing more thoroughly this chapter on proceedings, there only remains to summarise briefly the revision of the laws regulating pensions and the forfeiture to all right to the same.

As has already been stated in the first part of this Report, the revision of the laws regulating the rights to pensions became necessary as a result of the new classification that had been made of all bodily wounds and disablements. As the question of the different values given to disablements had undergone a radical change, it might be that the effects of a wound or of an illness would be considered of greater importance in the new lists, and consequently liable to a larger compensation. Accordingly, Article 22 of the Royal Decree No. 1598, 12th November, 1916, at the second comma, stipulates that all pensions granted up to

the date of the enforcement of the new classification will be subject to revision.

And the Royal Decree, No. 875, 20th May, 1917, stipulates :—

“ That the revision of pensions mentioned at the second comma of Article 22, Royal Decree, No. 1598, 12th November, 1916, will take place when, as a result of the medical examination, the amount of the pension, as stated in another Royal Decree of this same date, in conformity of the article itself, should be to the advantage of the interested party.”

“ The demand for revision must be made by the pensioners within the limit of two years from the date of the enforcing of the aforesaid regulations, and from that same day will date the concession of the supplementary benefits resulting from these same regulations.”

In the succeeding article it is declared that the results of the medical examination must be submitted to the approval of the Boards of Health of the Army and of the Navy, who are authorised to state, according to the new regulations, in which class the disablement is to be placed.

7. Finally, it may prove useful to devote a few words to the question of the forfeiture to pensions, as decreed by the various laws.

In Article 182 of the Law of February 21st, 1895, the following fundamental rule on this question states : “ Whosoever claims the right to a pension or to an allowance, should they allow more than one year to elapse from the date on which they ought to have started receiving the same, without sending in the relative application or the documents justifying his claim, will not be allowed to benefit by his pension or allowance before the first day of the month following the date of the presentation of application, or of documents justifying his claim. Minors and mentally deficient persons are excepted from this regulation.”

Evidently this regulation was meant to include the direct pensions as well. This would appear from the wording : “ Whosoever—,” and from the exception made : if only minors and mentally deficient persons are excepted, then all the others in any way entitled to it have a right to the pension and are included. Consequently, it includes disabled men as well.

To meet this difficulty, Article 1 of the Decree of May 1st, 1916, No. 497, provided : “ The procedure directed to ascertain, to the above effect, whether the wounds, injuries and infirmities are, or are not, due to causes of service must be performed “ *ex-officio*.” The procedure for the liquidation of the “ allotment of quiescence ” is likewise to be performed “ *ex-officio*,” provided the extent of the injuries or infirmities had been ascertained by the military authorities while the wounded man was still on active service.

The above regulation removed the possibility of forfeiture of claims threatened by the law (*Testo Unico*) to the detriment

even of the disabled in war. In a single case only, however, and for obvious reasons, the forfeiture had to be maintained, *i.e.*, whenever a declaration was required from the *party* for the purpose of ascertaining the nature of the infirmity. There are diseases and aggravations of previous physical troubles which do not appear outwardly, remaining unknown and unnoticed unless declared by the patient himself. The negligence, on the part of the patient, to make such a declaration is apt to make it impossible for the doctor to determine the gravity of the disease or to estimate, whether or no it is attributable to military service. Had not a term, however lenient, been fixed for such declaration, attempts at fraudulent representations might have been encouraged. Article 9 of the aforesaid Decree of the 1st May, 1916, therefore fixes a period of 5 years within which a doctor must be consulted by the injured man, failing which he forfeits all claims in the matter.

Article 10 furthermore enacts that: "In case of aggravation of an infirmity, for which the pension has already been liquidated, the interested party may put in a higher claim for an increased pension, provided the application be made *within the specified term of five years from the date of the cessation of service.*"

Thus much as far as "direct pensions" are concerned. With regard to "indirect pensions," the term fixed by Article 182 of the Law Code (*Testo Unico*) has been modified by Article 19 of the Decree of November 12th, 1916, No. 1598, enacting that: "The term fixed by Article 182 of the Law on Pensions (*Testo Unico*) of February 21st, 1895, No. 70 be extended, as regards the liquidation of war pensions, for a period of two years from the date of the filing of death certificates *or*, in the case of the man missing, from the date of the notification of the fact that he is missing.

A keen sense of justice urged the Minister of Pensions, Signor Bissolati, to plan the reform of which we have given a brief summary in the first chapter of this Report, and to propose that the term be calculated from the date of the conclusion of peace, so as to obviate all possible difficulties and impediments dependent on mere accident or oversight on the part of claimants or of the administration.

Having thus summarised the Italian legislation on War Pensions, I believe I have said enough to show that my country is earnestly and faithfully preparing to pay, as far as can be paid, the debt of honour and of gratitude that it owes to the defenders of their own country and of the great cause which has linked together all the free and civilised nations of the world.

APPENDIX.

A. Comparative table of pensions for the various ranks of the Royal Army, and for the first three classes of infirmities, according to enactments issued previous to the Act of 1912, according to the regulations of this Act, and, lastly, according to more recent enactments.*

B. Comparative table of pensions for the various ranks of the Royal Navy, and for the first three classes of infirmities, according to enactments issued previous to the Act of 1912, according to the regulations of this Act, and, lastly, according to more recent enactments.*

C. Comparative table of infirmities divided into categories, according to the decree of the 20th May, 1917, No. 876.

* These two tables have merely a demonstrative, not a specific value. As already stated in the Report, the principle of the classification of infirmities, and even the number of classes, having undergone a change, the first three classes of the old system cannot closely coincide with the first three classes of the new one. The comparison is therefore merely approximate.

A.—COMPARATIVE TABLE OF WAR PENSIONS FOR THE ROYAL ARMY.

Rank.	1st Category.			2nd Category.			3rd Category.		
	Pension Laws of 21-2-1895. No. 70 and enactments previous to the Law of 23-6-1912. No. 667.	Law of 23-6-1912. No. 667.	Decree of 20-5-1917. No. 876.	Pension Laws of 21-2-1895. No. 70 and enactments previous to the Law of 23-6-1912. No. 667.	Law of 23-6-1912. No. 667.	Decree of 20-5-1917. No. 876.	Pension Laws of 21-2-1895. No. 70 and enactments previous to the Law of 23-6-1912. No. 667.	Law of 23-6-1912. No. 667.	Decree of 20-5-1917. No. 876.
Private Soldier and others of equal rank	675.00	1260	1260	540.00	1008.00	1008	300.00	612.00	945
Corporal	800.00	1680	1680	640.00	1344.00	1344	360.00	720.00	1260
Sergeant	851.66	2240	2240	681.33	1792.00	1792	365.00	912.00	1680
Sergeant-Major	1277.50	2240	2240	1022.00	1792.00	1792	547.50	912.00	1680
Marshal and others of equal rank (chief)	1703.33	3000	3000	1362.66	2419.20	2419	730.00	1296.00	2268
Marshal	2129.16	3000	3000	1703.33	2419.20	2419	912.50	1296.00	2268
Marshal-Major	2555.00	3000	3000	2044.00	2419.20	2419	1095.00	1296.00	2268
Aspirant Officer (Cadet)	—	—	3000	—	—	2649	—	—	2484
Sub-Lieutenant	2760.00	3000	3000	1840.00	2208.00	2649	1617.00	1941.00	2484
Lieutenant... ..	3240.00	3240	3240	2160.00	2592.00	3000	1865.00	2238.00	2916
Captain	5160.00	5160	5160	3440.00	3440.00	4128	2665.00	3000.00	3870
Major	6000.00	6000	6000	4000.00	4000.00	4800	2870.00	3000.00	4500
Lieutenant-Colonel	7200.00	7200	7200	4800.00	4800.00	5760	3137.00	3137.00	5400
Colonel	8000.00	8000	8000	6400.00	6400.00	7680	3750.00	3750.00	7200
Major-General	8000.00	8000	6000	8000.00	8000.00	8000	4583.00	4583.00	8000
Lieutenant-General	8000.00	8000	8000	8000.00	8000.00	8000	5416.00	5416.00	8000

B.—COMPARATIVE TABLE OF WAR PENSIONS FOR THE ROYAL NAVY.

Rank.	1st Category.			2nd Category.			3rd Category.		
	Pension Laws of 21-2-1895. No. 70 and enactments previous to the Law of 23-6-1912. No. 667.	Law of 23-6-1912. No. 667.	Decree of 20-5-1917. No. 876.	Pension Laws of 21-2-1895. No. 70 and enactments previous to the Law of 23-6-1912. No. 667.	Law of 23-6-1912. No. 667.	Decree of 20-5-1917. No. 876.	Pension Laws of 21-2-1895. No. 70 and enactments previous to the Law of 23-6-1912. No. 667.	Law of 23-6-1912. No. 667.	Decree of 20-5-1917. No. 876.
Apprentice...	888.33	1066	1066	710.66	852.80	852	425	510	799
Select Seamen and others of equal rank	1050.00	1260	1260	840.00	1008.00	1008	510	612	945
Under-Pilot	1400.00	1680	1680	1120.00	1344.00	1344	600	720	1260
Second Pilot	1866.66	2240	2240	1493.33	1792.00	1792	760	912	1680
Pilot	2520.00	3000	3000	2016.00	2419.20	2419	1080	1296	2268
Midshipman, Sub-Lieutenant (Engineers and other Corps).	2760.00	3000	3000	1840.00	2208.00	2649	1829	2195	2484
Sub-Lieutenant = Lieutenant	3240.00	3240	3240	2160.00	2592.00	3000	2055	2466	2916
Lieutenant = Captain	5160.00	5160	5160	3440.00	3440.00	4128	3254	3254	3870
Sloop Captain = Major	6000.00	6000	6000	4000.00	4000.00	4800	3093	3093	4500
Frigate Captain = Lieutenant-Colonel	7200.00	7200	7200	4800.00	4800.00	5760	3431	3431	5400
Ship's Captain = Colonel	8000.00	8000	8000	6400.00	6400.00	6780	4078	4078	7200
Rear-Admiral = Major-General	8000.00	8000	8000	8000.00	8000.00	8000	4583	4583	8000
Vice-Admiral = Lieutenant-General	8000.00	8000	8000	8000.00	8000.00	8000	5416	5416	8000

C. COMPARATIVE TABLE OF INFIRMITIES DIVIDED INTO CATEGORIES,
ACCORDING TO THE DECREE OF THE 20TH MAY, 1917, No. 876.

I.

100 per cent.

Total blindness.

Mental diseases and diseases involving incapacity to do profitable work, or owing to their seriousness involving a profound alteration of the most important organic functions.

Loss of one or more limbs or of segments of various limbs, up to the limit of the loss of both hands or both feet or of one hand or of one foot.

Total loss of:—

- (a) all the fingers of both hands or of the two thumbs and of 6-7 other fingers;
- (b) one thumb and 8 fingers;
- (c) five fingers of one hand, the first two of the other.

All incurable infirmities or injuries involving absolute incapacity to do profitable work.

II.

80 per cent.

Injuries to both eyes of such a nature that objects at the ordinary visual distance can only be counted with the help of the fingers.

Total blindness of one eye, whilst the sight of the other is reduced between $1/50$ and $1/25$ of normal eyesight.

Total and permanent deafness.

Injuries to facial bones or to soft parts of the face or of the mouth involving severe disfigurements or difficulty of mastication, of deglutition, or of speech.

Serious injuries to the breathing, to the digestive, to the genito-urinary apparatus, and to the circulatory centre, these last if accompanied by symptoms of "scompenso" (disturbed circulation of the blood).

Injuries to the nervous system having produced serious consequences without, however, attaining the limits set forth in Category I.

Permanent rigidity of the vertebral column in extension, or serious and permanent incurvation of the same.

Serious and incurable impairment of the general state of health (cachexy, marasmus, permanent affection of the "hæmatopoietic" organs).

Total loss of the penis and testicles.

Aneurisms of the big arteries of the trunk and neck.

Chronic diffused arthritis seriously involving the function of one or more limbs.

Loss of the right arm or of the forearm.

Total loss of a lower limb.

Loss of fingers, not less than six in number, whereby the movement of prehension is impeded.

Grave injuries to both feet (medio-tarsal or under-astragalical amputation).

III.

75 per cent.

The sight of both eyes organically and incurably impaired resulting in the reduction of the binocular visual acuteness between $1/50$ and $1/25$ of normal eyesight. The loss of one eye, causing in the other eye a reduction of the visual acuteness between $1/25$ and $1/12$ of normal sight.

Severe and permanent labyrinthine vertigo.

Loss or severe disturbances of speech having a nervous origin, or caused by loss or serious injuries to the tongue.

Loss of left arm or left forearm.

Total loss of right hand or of all the fingers of the right hand.

Total loss: (a) of five fingers between the two hands, including the thumbs; (b) of five fingers of the left hand and of two of the last fingers of the right hand; (c) of the two thumbs and the two forefingers; (d) of one thumb, one forefinger and of four other fingers between the two hands; (e) of both forefingers and of five other fingers between the two hands, thumbs excepted.

Loss of a thigh on the 3rd superior.

Total ankylosis of hip or of knee with serious accentuated flexion.

Loss either of penis or of testicles, separately.

A scar or the results of other injuries seriously involving the function of the limbs or of important organs or regions.

IV.

70 per cent.

Organic and incurable injury to both eyes resulting in the reduction of the binocular visus between $1/25$ and $1/12$ of the normal state, or total loss of eye whilst the sight of the other is reduced between $1/12$ and $1/4$ of the normal state.

Total ankylosis of right shoulder.

Loss of left hand or of all the fingers of the left hand.

Loss of first three fingers or of last four fingers of right hand.

Comprehensive loss, between the two hands: (a) of three fingers, including the two thumbs; (b) of one thumb and the two forefingers; (c) of one thumb and of four other fingers, not including the other thumb and the forefingers; (d) of a forefinger and of five or six other fingers, not including the thumbs.

Loss of a thigh at third medium, or on the inferior third, or of a leg at the superior third.

Permanent issues of principal fractures of bones resulting in serious impairment of the functions of a limb.

V.

60 per cent.

Organic and incurable alterations of both eyes, resulting in the reduction of the binocular visus between $1/12$ and $1/4$ of normal state, or total blindness of one eye whilst the visual range of the other is preserved only in the central zone or for one half of its extension.

Purulent affections of the middle ear, with serious complications gravely lessening the power of hearing.

Total ankylosis of the left shoulder or ankylosis of the right elbow in extension.

Loss of thumb and forefinger of right hand; or of the first three or of the last four fingers of left hand.

Loss between the two hands.—(a) of both thumbs; (b) of one thumb and of three fingers, not including the forefingers and the other thumb; (c) of one forefinger and of four other fingers, not including the thumbs and the other forefingers; (d) of the last two phalanxes of 7-8 fingers, not including those of thumbs; and (e) of the last phalanx of 9-10 fingers, or even of 8, if those of the thumbs are included.

Loss of one leg at the inferior third or of one foot; medio-tarsal or under-astragalical amputation of one foot; medio-tarsal amputation of both feet; loss of all the toes, or 8-9 toes including the big toes.

Diseases of the heart without symptoms of “scompenso” (disturbed circulation of the blood) diffused and evident arteriosclerosis and aneurisms of the limbs involving grave impediment of their function.

Slight tubercular symptoms.

Visceral hernia with serious and permanent complications.

Epilepsy though not serious nor of frequent manifestations.

V.

50 per cent.

Total blindness of one eye, whilst in the other the sight is normal or reduced between $1/4$ and $2/3$ of normal state; concentric narrowing of the visual range of both eyes, involving the freedom of the central zones or under the form of gaps occupying one half.

Total ankylosis of left elbow in extension, or of right elbow in flexion.

Total loss: (a) of the first two fingers of left hand; (b) of right thumb with corresponding metacarpus or with one of the three last fingers of same; and (c) of the two last phalanxes of 2nd, 3rd, 4th and 5th finger of right hand.

Total loss between the two hands: (a) of five fingers, thumbs and forefingers excluded; (b) of one thumb and two other fingers, forefingers and remaining thumb excluded; (c) of one forefinger and three other fingers, thumbs and remaining forefinger excluded; (d) of the last two phalanxes of 5-6 fingers, those of the thumbs excluded; (e) of the last phalanx of 6-8 fingers, provided one of a thumb, at least, is included.

Total loss of 6-7 toes, including the two great toes or loss of 8-9 toes including one great toe.

Neuritis or its results if curable, and notable peripheral and persistent muscular atrophies.

Injuries of the tendinous muscular apparatus, notably involving disturbances of important movements.

VII.

40 per cent.

Incurable alterations of one eye, thereby reducing the sight between $1/50$ and $1/12$ of normal state, leaving the other eye intact.

Permanent bilateral reduction of the sense of hearing, not accompanied by purulent affections of the medium ear.

Loss of substance of the cranial bones in its total thickness, without causing disturbances in the functions of the brain.

Total ankylosis of left elbow in flexion or of the right hand.

Total loss: (a) of the last three fingers of one hand; (b) of the right thumb; (c) of the left thumb with the corresponding metacarpus, or of one of the three last fingers of the same hand; (d) of the last phalanx of all the fingers of one hand.

Total comprehensive loss between the two hands: (a) of four fingers, thumbs and forefingers excluded; (b) of the two forefingers; (c) of one forefinger and of two other fingers, thumbs and remaining forefinger excluded; (d) of the last two phalanxes of the forefinger and of those of three other fingers, with the exclusion of the phalanxes of the thumbs; or loss of the same phalanxes of the last four fingers of the left hand; (e) of the last phalanx of 3-5 fingers, including that of both thumbs; (f) of the last phalanx of 6-7 fingers, including that of one thumb; (g) of the last phalanx of 7-8 fingers, that of the thumbs excluded.

Tarso-metatarsal amputation of a single foot.

Total loss: (a) of 3-5 toes, both great toes included; (b) of 6-7 toes, including one great toe; (c) of 4-5 toes of a single foot, including the great toe; (d) of 7-8 toes, great toes excluded; (e) of the two great toes with the corresponding metatarsi; (f) of one or of both phalanxes of the great toes, together with the ungual phalanxes of other 5-8 fingers.

Total ankylosis of both feet, without their deviation and without notable disturbance of deambulation.

Very voluminous and knotty varices and incurable results of varices phlebitis.

VIII.

30 per cent.

Loss of peripheral vision, or of one-half of the visual range of an eye, the other being normal.

Extended and painful scars, adhering or retracted or liable to ulceration.

Results of injuries to the mouth, with disturbances of mastication, or deglutition, or of speech, but which do not present the gravity of those dealt with in the 2nd and 3rd categories.

Total ankylosis of left hand.

Total loss: (a) of left thumb; (b) of one forefinger and one other finger of the same hand, thumb excluded; (c) of the last two phalanxes of the forefinger together with that of the last two phalanxes of two other fingers of the same hand, thumb excepted; (d) of three fingers between the two hands, thumbs and forefingers excluded.

Total loss: (a) of 4-5 toes between both feet, including one great toe, or of the last four toes of a single foot; (b) of 5-6 toes between both feet, great toes excluded; (c) of a great toe or of its unguis phalanx together with the unguis phalanxes of 6-8 toes of both feet.

Total ankylosis of a single foot, without its deviation and without notable disturbance of deambulation.

Contraction of at least 5 centimetres of an inferior limb.

IX.

Organic and incurable injuries involving the reduction of the sight of an eye between $\frac{1}{2}$ and $\frac{1}{4}$ of normal state (the other being intact), or between $\frac{1}{4}$ and $\frac{2}{3}$ of both eyes.

Loss of one testicle.

Total, permanent, unilateral deafness.

Total loss: (a) of two of the last three fingers of one hand or of both; (b) of one forefinger, accompanied or not by the loss of one of the last three fingers of the other hand; (c) of the last two phalanxes of one forefinger and of two other fingers of either hand (not including those of thumbs and other forefinger); or of those of the last three fingers of one hand, or of four between the two hands; (d) of the last two phalanxes of both forefingers; (e) of the unguis phalanx of both thumbs; (f) of the unguis phalanx of one thumb, together with that of another finger; (g) of the unguis phalanx of 5-6 fingers of either hand (thumbs excluded) or even of 4 fingers if a forefinger is included.

Loss of a great toe and corresponding metatarsus.

Total loss: (a) of 2-3 toes, including one great toe, or of 4 toes, excepting the great toes; (b) of both great toes, or of these and of the unguis phalanxes of 1-2 toes; (c) of one great toe

or of the ungual phalanxes of 3-4 other toes; (*d*) of the ungual phalanxes of 7-8 toes, great toes excepted.

Obstinate nevrosis, but not of such a serious character as to be placed on same level as the infirmities set forth in the preceding categories.

X.

Stenosis due to scars of the external ear channel or injuries of the ala of the ear, involving a notable disfigurement.

Total loss: (*a*) of a little finger; (*b*) of the last two phalanxes of two fingers, excluding those of thumbs and forefingers; (*c*) of the ungual phalanx of one of the thumbs; (*d*) of the ungual phalanxes of both forefingers or of 4 fingers (thumbs and forefingers excluded), or of 2 fingers if a forefinger is included.

Total loss: (*a*) of 2-3 toes between the two feet, great toes excluded; (*b*) of one great toe, or of the ungual phalanx of both great toes, whether accompanied or not by the loss of the ungual phalanx of 1-2 toes; (*c*) of a great toe or of its ungual phalanx, together with that of 4-5 other toes; (*d*) of the ungual phalanx of 5-6 toes, not including the great toes.

COMPULSORY TREATMENT.

BY DR. A. BASSETTA.

The existing laws in Italy relating to accidents to workmen are all to be found in the paragraph No. 51 of the Decree, dated 31st January, 1904, and in the Regulations for its execution, approved by Decree, dated 13th March, 1904, No. 141.

In no article, either in the Law or in the Regulations, is any mention made of compulsion for the injured person to undergo that surgical treatment which might diminish or cure his infirmity. The Article 103 of the Regulations compels the workman only to comply with the visits of control in cross-examination between the curing physician and the fiduciary physician of the Insurance Institute or Medical Panel instructed by the Insurance Institute with the object to ascertain the cause of the accident. However, there are symptoms of an incipient evolution tending to remove the rigidity of the principle of recognising in the individual the unconditional right to dispose of his own bodily safety, which is proved by recent legislation, as also by various judgments pronounced by tribunals, that in determined circumstances of fact it has been considered logical and existing the obligation of undergoing that treatment pointed out as necessary for the cure of the invalid. In these cases, however, the opinions differ when it is a question of appraising the amount of the indemnity to be awarded the invalid; some opine that the compensation should be commensurate with the damage suffered by the accident independently of any treatment; others, that it should be commensurate with the importance of the invalidism persisting after the treatment, whether it be improved or aggravated by the effect of the treatment. Others do not recognise and do not compensate the damage and neither the death that may have occurred as result of the operation freely chosen by the invalid, such damage or such death being a fact not directly secondary to the industrial accident because it has with same no relation of causality. For such reasons the idea of the non-obligation to undergo surgical treatment, at present upheld by the laws governing civil accidents, is not only discussed in its essence, and here and there contradicted by the judgments of competent tribunals but attacked in its application which may cause as consequence a diminution in appraising the compensation.

Another notable action tending to destroy this principle of non-obligation to undergo surgical treatment results from the provision in the Decree, dated 25th May, 1913, No. 668, which approves the Regulations governing workmen's accident insurance in the Tripolitania and in the Cirenaica. In fact, one reads in Article 24 that: "Among the treatments foreseen in

the present law are not comprised surgical operations *except minor operations.*"

An identical clause is found in the Bill for Compulsory Insurance Against Accidents in Agricultural Labour, which was passed into law by the Decree, dated 23rd August, 1917, No. 1450. Further, it is opportune to remember that in 1914 the Republic of San Marino approved, in the sittings of the 23rd May and 18th July of its Grand and General Councils, the law relating to workmen's accidents in which a comma in Article 19 is thus formulated: "If a workman . . . refuses to submit to an adequate treatment or even to a trifling operation which does not reasonably import preoccupation for his life the Insurance Institute may refuse payment of any compensation."

In any case, it is a fact that for workmen's accidents is still in force, without modification, the law dated 31st January, 1904, which does not oblige the workman to submit to surgical treatment to improve or cure his infirmity. A slight restriction, however, is made in the case of minor operations, for which is admitted the compulsion in the law relating to workmen's accidents in the Tripolitania and in the Cirenaica, and in the law on the insurance against agricultural accidents.

Similar laws are in force in the Republic of San Marino for the minor operations which do not import reasonable preoccupation for the life of the invalid.

In the Italian Army Medical Corps the regulations which govern the conduct of the soldier in face of the proposal for surgical treatment do not admit the compulsion to the treatment. The regulations are based on the Art. IX., § 323 of the Regulations relating to the Recruiting of Conscripts dated 2nd July, 1890, which provides that no conscript may be subjected to a serious operation with the object of rendering him fit for military service without he himself consents to such operation. The Inspectorship of the Army Medical Corps extended the provision of this article to those wounded in war, stating, "Regarding refusal on the part of the injured soldier to submit to a surgical operation, this Inspectorship has already expressed its opinion, that it is contrary to any operative intervention if same is refused by the injured soldier, which opinion is moreover supported by § 323 of the Regulations relating to the Recruiting of Conscripts, as also by the law and the regulations on workmen's accidents."

The Decree dated 1st May, 1916, establishes the rules for the payment of war pensions to soldiers who refuse treatment in these terms—"When according to the opinion of the Medical College of the Army Medical Corps Administration and of the Army Medical Corps Inspectorship it results that the cure of the soldier depends uniquely on the non-execution of the treatment, no payment of pension will be made. If, however, the authorities of the Army Medical Corps hold the opinion that the proposed treatments impede only an improvement, the person will be paid only for the lower category to that which the infirmity is judged ascribable, provided, however, that the soldier is unable to continue or to reassume later on service."

For this reason, owing to the present regulations which are in force in the Army Medical Corps, the physician cannot avail himself in any way of his persuasive action, or of his authority, to impose a treatment, because a soldier who refuses treatment, exercises his right, a right that cannot be contested by the physician when the invalid exercises it in the manner prescribed by the law, and he submits to the pecuniary consequences mentioned.

It is, however, evident that whilst on one part the military law recognises and admits the right of the wounded soldier to refuse a medico-surgical treatment, it exercises in reality a coercion, inasmuch as it limits this right of refusal to the treatment with the suppression or reduction of the war pension. This constitutes a grave social error and creates a harmful disparity in the effects of the application of the law, because whilst the well-off can easily renounce all or a part of the war pension, maintaining whole their invalidism, the poor person, the workman who lives by his labour, is unable without grave detriment to consent to this renunciation, and whatever he may do he will always be damaged: damaged if he submits to the treatment, because he will either recover and will once more be exposed to all those risks from which the infirmity had spared him, or will improve and lose the advantage of the pension; or will get worse, and the increased pension will never compensate him for the aggravation of his invalidism; damaged further if he refuses the treatment because in addition to losing the opportunity of being cured or at least of improving his invalidism, he loses entirely or in part the rights to his pension. In addition he is lost to the nation as a soldier and as a workman; neither can he defend it at the Front, neither can he contribute to the industrial and commercial revival which will commence immediately after the cessation of the present hostilities; a new war, not bloody, it is true, but none the less fierce, for the conquest of the world's markets, for the commercial expansion, for the consolidation of the national fortune.

Under present conditions the refusal of the injured soldier to undergo the treatment is due in greater part to the complete deficiency of his psychological and moral preparation for the period after the war. The invalid does not take into consideration that he has not finished, with the completion of the medico-surgical treatment which free him from the obligation of military service, all his painful odyssey, and that another will commence as soon as he becomes again a citizen, and more black, more painful, more solitary, if his private means or remaining capacity for work will not be such as to permit him of augmenting somewhat to the limited resources provided by his war pension. He confides too blindly in the future, calculating more on his neighbour than on himself, more on the work of others than of his own work.

It is necessary to remove these too dangerous illusions, to give him a vivid image of his moral, economical and social conditions

as they will be after the war, a time not so far ahead, and it is certain that the war invalid who refuses that intervention which might improve or cure his infirmity may still be redeemed of his error, treating him like a man and a citizen.

A last attempt to redeem an invalid who refuses the treatment might be made in this manner :

When the invalid has irrevocably stated his refusal to undergo the treatment and has been proposed for consideration of the War Pension Appraising Board, he should be discharged definitely and irrevocably without liability to revision, even if the nature of his invalidism might give hopes that with appropriate intervention a cure might ultimately be effected.

The right to the war pension should be appraised by law according to the nature and degree of invalidism, and the injured soldier should be assured that the amount of his pension cannot be reduced whatever improvement may be found in his condition, either by effect of the diminished invalidism as a consequence of opportune treatment or by the effect of vocational re-education.

The payment of the pension should, however, be conditional, and in like manner as the law obliges injured soldiers capable of being re-educated to attend the school of re-education, with very few exceptions, which have to be approved in every case by the superior authorities, it should be made compulsory for the injured soldier refusing the treatment, and now free from the pre-occupation of military service to pass over to a place of concentration, specially created for the purpose, in which the indisputable ability of the medical officers, their moral and persuasive force, the favourable example of companions more pliant and more judicious, may cause him to alter his decision and to accept that intervention which he had up to then refused.

The injured soldier, if after this trial he still refuses to undergo the intervention of the surgical operation, should be dismissed and would then come under the regulation of the Decree of 1916, cited above. On the other hand, the injured soldier who accepts the intervention, would maintain his right to the pension to the full amount allotted him by the Appraising Board, whatever may be the betterment that results from the intervention to which he submits, and acquires the right to a relative increase of pension if the result of the intervention aggravates the conditions of his invalidism.

The irreducibleness of this pension, even if the coefficient of the invalidism diminishes, should constitute a premium of encouragement to the goodwill of the injured soldier and should be the clearest demonstration that the insistent exhortations which from all sides are made to him, that he allows himself to be treated, have not for their motive the paltry speculation on the reduction of the military pension, as, unfortunately, the injured soldier is all too often prone to believe, but have their reasons in motives much more elevated, more nobler and more powerful, and, namely, in the indispensable coalition of all the

forces of the Nation for its social, industrial and economic liberation after the war.

The eventual burden to the State would be largely compensated by the economic advantages to the Nation if only half of the invalids, who are now effectively lost to it as soldiers and as workmen, might regain, at least in part, their energy for labour, their aptitudes for a trade, and in addition return with the opportune vocational re-education—important elements in the emulation of work and in the National production.

On the other hand, the prudence and the long experience of the medical staff would easily succeed in discovering all attempt at fraud, promptly eliminating every case in which there is suspicion that the first refusal to the treatment was based on an ignoble speculation on that invalidism contracted combatting in the sacred name of our Mother Land.

FUNCTIONAL EXERCISING OF MUTILATED LOWER LIMBS.

By Dr. A. BASSETTA.

The technique of the surgical art in the performance of an amputation, provided that the hand of the surgeon is not forced by contrary elements, certainly constitutes the essential factor on which depends the success of the operation, but when the operator has to work under difficulties, when the urgency of the case imposes a hasty intervention in adverse circumstances, without means of assistance, and when the general condition of the patient and the local conditions allow but a limited choice of methods, the probability of the crippled soldier having later on, after complete surgical treatment, a stump having the best possible functional and operative efficiency, diminishes rapidly in marked proportion. •

Those who in times of war previous to the present have occupied themselves, or those who are occupying themselves at the present time in this special chapter of war surgery know how often the more or less happy result of an amputated stump, and sometimes its complete anatomical and functional deficiency, may depend on a trifling detail of technique which at the time of the intervention, and in face of greater exigencies, appeared of secondary importance which could be neglected without danger of ulterior damage.

More or less efficacious arrest of bleeding, sutures of the deep parts and of the superficial parts of the stump, which at times should be tight and close together and at other times loose and far apart, the interposition or no of a draining tube, the thoroughness of the immediate medication, the care in the confection of the bandage, the posture assumed in bed, etc., are all so many rocks on which the technique of the amputation may come to grief.

Between the complete closing up of all the planes of the stump which aim at obtaining cure by *prisnam*, and the cure by second intention of a stump left completely open and stopped, there exists quite a series of intermediate methods (tubular drainage of the deep parts, points of support of the muscular mass, points of approach of the skin) in each of which the surgeon may put into practice a deal of observation and opportune means that his experience has taught him for securely obtaining a stump capable of moving in its nearest articulation, rich in soft morbid parts and not adherent to the bone, not sensitive to pain, not infiltrated, with cicatrised line away from the part sustaining the load; in a word, a stump to which can be applied in the shortest time possible a good prothesis apparatus.

Amongst the auxiliary means adopted for the immediate and successive treatment of stumps, one of the most widely adopted is certainly that of the continual traction by weights; but of the many variations of the method which we read in the surgical literature, I do not remember to have yet seen that which was applied in our Department for War Cripples, and which has always met with success insomuch as to induce us to extend its use as far as possible. Like all the modifications to a technique of very vast application it is employed with advantage only in certain cases which answer to special requisites; but as these cases are all other than rare I believe it well to describe them rapidly in the hope that it may be useful to those of my colleagues who may wish to experiment.

In our department arrive not rarely persons with amputated thighs who, either by force of necessity under which the amputation was executed, or owing to the setting in of successive phlogistic and septic processes, or by the diverse coefficient of retraction of the soft parts which surround the remaining bone, have gravely defective stumps. Sometimes it is a case of a true conoidal stump, at other times a case of cicatrice in the terminal plate, largely adherent, hard, fragile and absolutely intolerant of even the slightest strain of friction or of traction, or of wide saws and abundant secretion, real growths of granulations of a serious nature, for the greater part to be cured only by the most attentive care over a long period and with local results quite unadapted to the application of the prothesis.

In these cases the surgical intervention imposes perhaps nothing else than to re-establish the tension equilibrium of the soft parts which have retracted on the rigid parts of the skeleton. But the operative intervention, however correct and perfect it may be, does not guarantee against the return of the conoidic state of the stump if the soft parts that surround it be left abandoned to the effect of their spontaneous retraction; and if they are not continually drawn in peripheric direction, either by contrasting to their elastic coefficient, or by contrasting to the tendency often unrestrainable on the part of the invalid suffering from amputated thigh to put his stump in flexion. It is indeed known that the position in flexion of the hip is not rarely the greater cause of the conical shape of the stump in this segment of the limb, not only by reason of the passive falling of the soft parts towards the roots of the leg, but also by reason of the preponderent function of the erect muscle at the front of the leg, which, deprived of its peripheric attachments owing to the absence of the knee, can no longer put itself in tension when its shortening by contraction has occurred.

The continual traction by weights on the soft parts of the mutilated limb is certainly in this case an inestimable advantage. But even with only small experience of war cripples and of their psychology, one will easily recognise that the application of the classical *permanent traction by weights* encounters some difficulties. Often the patient has had a long experience of this method of treatment with but small favourable result, for which

reason he is not too well disposed to accept or absolutely refuses a fresh intervention if the lying in bed has to be prolonged or aggravated by the tedium of the continual traction; often it is advisable to attenuate to the patient the importance of the intervention which he should still undergo, promising him that in a few days he will be able to leave his bed; often again, as has frequently occurred in my case, it is the case of a worthy crippled soldier, willing and active, who has already progressed in his vocational re-education.

In fact, we have had the occasion of commencing the ambulatory traction of the stump in the School Department, thus obtaining that the treatment did not interrupt, except for a few days, the attendance of the classes.

The technique of the ambulatory traction is very simple; it may be applied in a very early stage, as soon as is exhausted all local reaction successive to the intervention, whether it is the case of a real amputation or an adjustment of the stump or a simple liberation of a segment of a mutilated limb.

A strip of good adhesive plaster is supplied circularly to the roots of the limb, first by a whole turn which grips the skin, and by a second turn which covers half-way the first. Between the two turns one engages the four ends of two other strips of plaster, arranged in form of loop in the axial direction of the stump, and in manner that, crossing one another perpendicularly, the one comes to lie in the sagittal plane and the other in the front plane of the limb.

Their ends thus meet near the roots of the thigh, at the extremes of two diameters of the limb, perpendicular between them, and lying approximately the one in the front plane and the other in the sagittal plane of the stump. The strips are long enough that their point of union is about four inches below the free end of the stump, and upon it, fastening by a strip of plaster, is adapted a thin circular board having a hole in its centre and a little notched on the circumference in that part corresponding to the four strips. In this way a small plate is obtained upon which is placed a lead disc gradually increasing in weight.

The free space between the extremity of the stump and the weight is amply sufficient for allowing easy control of the stump as also for the necessary medications. The medication gauze is fastened securely by a crossed strip of soft gauze which passes in the spaces left free by the strips of plaster, and is fixed with a soft bandage on to the stump end of the pelvis. The patient can freely walk about with crutches, not feeling any inconvenience from the weights contained in the space of the trousers which are tucked up under it; learns easily to sit down, leaving his stump stretched out and, therefore, always subjected to the traction. When the patient returns to bed, the lead disc is removed and the ambulatory traction is transformed with facility into common traction by simply fastening the traction cord through the hole in the centre of the wood plate.

In the wide application which we have made in our Department for War Cripples of the Ambulatory Traction on the stumps of thighs, not only have we never encountered any case of intolerance, but, on the contrary, we have always found that it is easily tolerated. The ambulatory traction conquers the elastic inflammatory retraction of the muscular mass and the skin covering; it substitutes to a certain degree the peripheric attachment of the muscle which the surgical intervention has removed, bringing the muscular bundle in opportune peripheric tension each time that a voluntary or passive contracted may have shortened it; it, therefore, counteracts the retraction of the muscular mass in the limb, a retraction which inevitably involves the retraction of the aponeurosi and the integuments. Thus is avoided the tardy conoidic development of the stumps which when it has not been determined by physiological reasons of the growth in length of the part of the remaining skeleton, but in the expression of the mechanical or phlogistic retraction of the surrounding soft parts, assumes, as is known, a particular and almost constant physiognomy for each of the segments of the limb upon which has fallen the amputation, in correspondence with the particular coefficient contraction, and, therefore, of retraction which has every muscular group, considered from the point of view of its function.

Not the least advantage of the ambulatory traction by weights is that, exercising itself in erect position, and, therefore, in the best position for the line of gravity, it acts without dispersion of force. The necessary weight is notably reduced; usually it is sufficient for the ambulatory traction in erect station a third of the weight which has to be applied to obtain the same effect with the traction in bed. A lead disc weighing but little more than a kilogram has always been sufficient for obtaining excellent results in our case.

The tendency of flexion of the hip is energetically contrasted; this fact is of extreme importance because it is not easy to extend a short thigh stump when the shortness of the lever of attachment conspires to impede the gradual extension together with the sinking of the pelvis in the thickness of the mattress.

We have remarked a further favourable influence on the stump as a result of the ambulatory traction. In addition to the beneficial change of nutriment owing to the very slight stasis which it procures, it acts also, perhaps by the almost rhythmic traction of the oscillating weights, as a slight massage on the skin, pressing it on all sides in fashion that its mobility is gradual, rapid, uniform and complete.

NEW ERGOGRAPH FOR MUTILATED FOREARMS.

By Dr. A. BASSETTA.

A stump even though satisfactory from the surgical point of view may be inefficient from the point of view of function if it has not been trained by successive treatment and suitable functional re-education to avail itself of the false limb intended to replace the lost part. The movements and operations that a stump is capable of performing after it has been subjected to an appropriate and vigorous treatment may be developed to such a degree as to render possible functions that the surgeon had not even had in view at the moment of the amputation and many of the inconveniences that the stump may cause to the patient may disappear by improving its function.

Having set to myself the task of training stumps of forearms by movements of pronation and supination I desired to make use of the mechanic-therapeutic apparatus in current use, adapting it with particular devices for the hold and the attachment on the stump. But I soon realised that the difficulties encountered rendered useless my attempts, because even the best mechanical apparatus especially constructed for rotary movement of the forearm and anatomically integral with it proved unsuitable when applied to a stump.

The constant resistances of the ordinary apparatus, owing to the numerous frictions of the axis of rotation, due often to the manner in which the effort of the limb is transmitted to the gradual resistance of the machine, are generally too strong for a recently amputated stump, which is often in that state of functional paralysis that prevents for a certain period all aptitude to a certain movement.

Besides, the erect position, with arm extended, that the patient must maintain for the exercise of rotation of the forearm in the ordinary mechanic-therapeutic apparatus has an unfavourable result in the case of a person with a mutilated forearm. The limitation of movement of the stump, the deficiency of contractive energy in the residual muscular mass and often the loss of all notion of the technique of the various movements in the amputated limb, bring about the development of subsidiary movements in segments close to the limb so as to have the illusion and not the reality of the simple movements desired. Thus the person with a mutilated forearm to which is applied an apparatus of ordinary type for developing the movements of pronation and supination, not succeeding in conquering the resistance of the machine, has recourse to a spiral movement and especially to rotation of the arm. This movement is complicated by heaving of the shoulder for the movement of pronation and of

traction for the movement of supination; movements which rapidly cause a loosening of the gripping organ on the stump and produce play as in a pump in the sleeve which cannot be eliminated without having recourse to a tightening up of the sleeve which, however, cannot be tolerated by the patient.

I have therefore endeavoured to eliminate these inconveniences by giving the patient a comfortable sitting position and developing the movement of rotation of the forearm with elbow bent at an angle of 90 degrees.

In this attitude the articulation humerus-cubit-radial acts as a stop-block to the movement restricting exactly to the forearm the excursion from pronation to supination.

The apparatus consist essentially of a vertical shaft of slow rotation turning on two ball bearings. The shaft is supported by a bracket which in turn is supported on a strong column fixed to the base of the machine. A support slides on this column, adjustable to various heights, which supports the elbow and fixes same by special ligaments.

The shaft terminates at its lower extremity in a sleeve with jaws concentric to the axis of the shaft, and this sleeve, whilst assuring a firm hold of the stump also guarantees the exact correspondence of the centre of rotation of the forearm to the centre of rotation of the axis. At the top a flat disc is keyed to the shaft and follows every movement of same; its periphery is grooved and has a series of holes for attaching a rope which sustains the weights. The movement of the rope for transferring the traction from the horizontal plane to the gravity plane is made around a system of two vertical pulleys which rotate on a vertical axis, which constantly maintains the plane of the pulleys in the direction of the rope stretched by the weights.

The same rotary shaft carries in addition:—

1st. A second disc, likewise keyed to the axis, of smaller dimensions and calculated so that the development of its rotation is reduced to half of that of the main disc. This disc provides the attachment for the carriage controlling the pen for the graphic record of the movement.

2nd. Two pointers, loose on the axis, and taken up in the movement by a stop pin for measuring the angle, both in pronation and supination.

3rd. A graduated dial, also loose on the axis, for the appraisal in degrees of the amplitude of the movement.

4th. A large disc or flywheel of cast iron, weighted at its rim, which at will can, by a simple pin device, be made fast or loose upon the centre shaft.

With these devices the function of the apparatus may be active or active-passive.

Active function.—The crippled person is seated comfortably, the relation between the chair and the plane of support of the

apparatus is such that, with chest comfortably erect the arm and the elbow rest in the support provided for that purpose almost in a horizontal position; the stump of the forearm is vertical; its extremity is fastened in the gripping device such as to constitute a quite rigid whole with the axis of rotation of the apparatus. Whatever may be the position of the forearm in relation to its axis of rotation, this position can always constitute the point of departure for commencing the exercise, simply attaching the rope sustaining the weights, normally, to the disc (position immaterial). The active rotation towards the pronation or supination can, however, be developed by moving the attachment so that in the initial position the stump is deviated by the traction of the weights in supination when the effort should be made in pronation, and *vice versâ* in pronation when the effort should be made in supination.

The relation between the amount of the weight raised and the amount of elevation gives in kilogram-meters the work computed. The graphic on the chimograph allows of studying the conditions of the function, not only in two directions of the movement but in the commencement of the movement, in its development, in the progressive fatigue and in the exhaustion. The reading in series of the graphic record, which are all recorded by the constant tracing of the chronograph to the second, furnishes the data for appraising the progressive amplitude of the rotary movement, the speed of the movement, the resistance to the movement with constant weight, or with a gradually increasing weight; in short, allows of securely controlling, by data which can be permanently fixed, the progressive development of the functional training. The pointers on the graduated disc show at a glance, and without having to calculate the total angular amplitude of the movement of pronation-supination, and, separately the angular value of pronation and that of supination.

Passive function.—Eliminating the attachment of weights, the loose flywheel is coupled to the axis of rotation. A slight thrust of rotation by the stump enlarges the movement by the inertia of the flywheel until the equilibrium between the initial thrust and the resistance to the torsion of the forearm is reached. The elasticity of the torsion thus proved promptly recoups itself in the initial phase of the return movement, followed soon by a brief active phase and concluded by a passive terminal phase again determined by the inertia of the flywheel.

Also these active-passive movements may be recorded on the chimograph, obtaining from the graphic an exact document controlling the gradual development of amplitude of the movement of pronation-supination of the wounded limb.

MECHANICAL PROTHESIS FOR MANUAL WORK.

By Professor RICCARDO GALEAZZI,

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Of all the problems created by the question of assisting disabled men, that of the mechanical prothesis is, perhaps, one of the most important, the most difficult and the most urgent.

Manifold are the difficulties which surround its solution, difficulties both technical and moral: Technical difficulties inasmuch as it is a question of providing a substitute for one of the most perfect organs of the human economy: moral difficulties, to conquer the deep-rooted prejudices that tend to inculcate in the cripple an instinctive mistrust of the possibility of his being re-educated to perform a really productive labour with an artificial hand.

For that reason we find ourselves before a closed circle, as, whilst the perfecting of the mechanical prothesis is by necessity subordinated to experiment which can only be realised by extended application, on the other hand, the cripple will only allow himself to be convinced of its utility when he is in possession of a functional organ perfect enough to vanquish all his diffidences.

It can, for this reason, be truly affirmed that the question of the functional prothesis of labour is still far from its solution and far from satisfying in every respect the disabled man, the technical expert and the re-educator.

However, it can be said that great progress has been realised in the cycle of the few years which have elapsed since the beginning of the world war, if it be considered that before that time there hardly existed a functional prothesis of labour, bar a few rudimentary apparatus in the various manual schools existing in Europe for the education of the crippled and mutilated.

The painful evidence of the exceptionally great and increasing number of war cripples has imposed a character of extreme urgency to the study of the difficult problem of substituting in manual labour the natural hand, a problem in the solution of which the brains of the best technicians, orthopedicians and surgeons of all the nations at war are engaged.

The present report has for its chief object to place in evidence the progress realised up to the present in Italy in this branch of assistance to disabled soldiers and sailors, and it will go to show, we are convinced, that the contribution of Italian skill in the solution of the difficult problem has been neither small nor unimportant, but indeed that the studies commenced and conducted with great fervour give a sure warrant of fruitful results which will benefit the workers of all the peoples that have nobly shed their blood in the defence of their country and of liberty.

Before entering on the examination of all the various forms of mechanical prostheses for labour that have been conceived and constructed in Italy, I deem it opportune to refer to some questions of a general nature still much debated and on which depends the line which should be followed in the construction of the functional prosthesis for labour, and it will be opportune that these questions be widely and resolutely discussed by the competent persons gathered together at the important Inter-Allied Conference in London.

One of the first questions of paramount importance regards the kinds of manual labour to which it is opportune and urgent that the studies for the creation of perfect functional prostheses should be directed.

All the experts in re-education have repeatedly affirmed that in establishing the vocational training of the disabled man the nature of the mutilation is the most important factor to be considered, but it is beyond doubt that in the case of one-armed men the factor that governs such considerations is closely allied with the functional value of the prosthesis of which the cripple can dispose, and which should be modified in accordance with the rate of his progress.

This is so much the more true considering that the opinions which were ruling two years ago are already greatly modified. Two years ago it was affirmed by pretty well all re-educational experts that, with rare exceptions, one-armed men should be directed towards those trades that require the use of a single hand, or towards non-manual careers.

From the social point of view agricultural labour and mechanical industries are the most important branches.

In view of the inevitable deficiency of agricultural labour after the war, it is logical that towards agriculture should be directed the great number of war cripples.

The labour problem in the mechanical industries has certainly not the importance that it has in agriculture, but, for all that, seeing the marvellous development attained by this industry during the war, considering the effort that will have to be made after the war for its progress, for the emancipation of this industry from foreign servitude, it is only reasonable that a

considerable number of our brave war cripples with mutilated arms should be encouraged to apply themselves to the mechanical industries.

With the foregoing, and owing to the necessity of imposing a limit to the treatment of this subject, which would be too vast if extended to the mechanical prostheses for all occupations, I deem it useful to consider them principally from the point of view of these two groups of workers: agriculturists and mechanics.

In the present condition of the mechanical prosthesis the question of the seat of amputation, as will be readily understood, has an essential importance from the standpoint of vocational production, and, therefore, in the two groups of workers mentioned different conditions are ruling. Whilst a man with an arm amputated high up near the shoulder may, with all hope of a sufficient productive capacity, be encouraged to take up agricultural labour, inasmuch as the present apparatus and those now being perfected answer very well even in the case of grave mutilations of the upper limb, it would not be advisable, with the present condition of the prosthesis, to direct men with the arm amputated too near the shoulder towards mechanical industries.

On the other hand, a man with an amputated forearm, thanks to the perfecting of the artificial hand which is in progress, and even in its present development, can attain to such dexterity in a trade as to give on an average the same production as that of a normal workman, whilst in the case of an amputation too near the shoulder the difficulties which oppose his exercising a trade increase too greatly in proportion.

In their case, whilst the leverage of the arm is greatly reduced, the mass of the prosthesis is on the other hand increased, and it is axiomatic that the functional value of a stump is in inverse ratio of the mass and of the protetic organ.

Also, if thanks to the development of the surgical cineprosthesis, many of the working movements become independent, the artificial hand in the case of those with an arm amputated too high up will always be but an auxiliary of the sound hand, and the sound hand will have to intervene always to aid the function of the other. One can foresee, therefore, that those having an arm amputated near the shoulder will hardly be able to succeed in producing a sufficient measure of useful work, even if endowed with the greatest of moral courage and with the greatest of aptitude.

And as it is an undisputed law that the work of training of the disabled should not constitute a sacrifice either to the disabled man himself or to the manufacturer called to make use of his labour, these general considerations in the establishing of various branches of training for disabled men should be given attention in order not to expect from the functional prosthesis more than it can give, and not to cause as a consequence in the disabled

man those delusions so prejudicial to the work of re-education and to his social redemption.

Another question of a general nature and of summary importance from the point of view of the employment of men with mutilated arms in the mechanical industries should be examined before approaching our specific task of examining the new improvements and perfections attained in the field of the functional prothesis; this is to ask oneself whether the efforts of the technicians should with preference be directed to the perfecting of the mechanical hand or to the transformation of the machine tools.

In the first place, it appears logic to establish the general thesis that instead of adapting the machine tool to the disabled man, it would be preferable, wherever possible, to adapt the man to the machine tool, or to study devices which can be added to the machine, as it is not prudent to rely that after the war many manufacturers may be disposed to assume the expense of this transformation, in view of the uncertainty of the results and of the possibility of compensation for this expense.

Besides, it is beyond doubt that the efforts of the instructors will have only attained their purpose when they have succeeded in reinstating the disabled man in the ordinary workshop without special privileges and without too sensible inferiority in respect to the work of the normal workmen.

For these theoretical considerations it would seem logical that in this direction of the transformation of the machine tool, the movement should be proceeded with very cautiously and that in any case the creation *ex novo* of special machines for cripples is hardly advisable if there is the probability that after a thorough analysis it be resolved to create automatic or semi-automatic machines of which there are already many types on the market.

In this connection it will be opportune to refer to one of these attempts made in Italy, which for its seriousness and importance merits attention and study.

The machine constructors, Moretti & Croce, of Milan,* in the praiseworthy intention of utilising in mechanical industry the work of men with amputated upper limb has constructed a semi-automatic turret lathe which differs from the ordinary turret lathes in that the movement for operating the pincers which grip the work, as also the movement of the toolholder turret and of the cross toolholder are actuated, instead of by levers or hand wheels, by means of water pressure which is regulated by simple water cocks. The lathe is operated by means of cylinders in which move in one sense or the other piston rods controlled by distribution cocks.

* Moretti and Croce.—Special device for cripples with amputated upper limbs. Bulletin of the National Federation Committees of Assistance to the blind, crippled and mutilated. 1918, No. 2.

The water pressure is that of the ordinary main supply and the consumption practically negligible, the cylinders being of very small diameter.

The bar having been placed in the lathe, the tools adjusted and the travel regulated, the operation can be effected with all ease with only one hand, as the effort required for operating the water taps is very slight. Within certain limits the travel of the tools may be regulated in relation to the resistance of the metal to be worked, by opening, more or less, the cock of the tap. The lathe can therefore be advantageously used for work in series on simple parts and can, as is evident, be operated by a one-armed man.

As a set-off to such advantages, however, is the fact that the operation of a machine of this type is controlled by organs of certain delicacy which require continual and precise maintenance and adjustment, which, of course, cannot be entrusted to the disabled operator.

We are here confronted with a machine of indisputable industrial value, inasmuch as in many cases its use may represent an advantage in respect to the ordinary type of turret lathe, but we ought to make some reserve regarding its practical employment as a means of finding work for disabled men in mechanical industries.

In fact he who desires to perform really useful service for them should endeavour above all to acquire for them a vocational skill which, compatible with their physical deficiency, may endow them with an individual patrimony which may compensate them at least in part for their injury. However, this purpose is not attained by setting them to work semi-automatic machines like the Moretti & Croce machine, work in which technical skill and intelligence do not play a great part.

It is further evident that the disabled man can operate such machines only if they represent an advantage to the manufacturer over the other types so as to counsel their purchase, because competition compels the manufacturer inevitably to endeavour to purchase at the lowest price possible. One should moreover not lose sight of the fact that the eventual employment of the disabled man for the operation of special machines is limited to that special period in which the machines themselves represent a progress over similar types and pending their being supplanted in their turn by better types and, finally, to bear in mind that the disabled worker is in a certain fashion deprived of his liberty in the sense that he is obliged to work only in those workshops where such machines are installed, which fact may constitute a danger of exploitation, which it is not advisable to overlook.

So that although applauding the firm of Moretti & Croce for their noble attempt to provide disabled men with a means for feeling less acutely their physical deficiency, although fully appreciating the advantages of the device, constructed with a view to easy operation and to require the minimum effort from

the workman, we feel that they should not be encouraged to persevere in this direction. It does not exclude, however, that the lathe may not be usefully employed in providing occupation for those disabled men for whom technical training has not been possible, or who have refused to avail themselves of it, not losing sight, however, of the fact that such re-education is the real pivot on which rests the redemption of the disabled and that towards it should be directed all efforts.

From the considerations premised and from the special examination of these altered machines, it appears to us justifiable to affirm that the principle in general is not to encourage the alteration of the machine tool for the use of disabled men in the workshop.

We have now to consider the general conditions which, logically, a functional arm should satisfy, bearing in mind that we intend to strictly reserve ourselves to agricultural labour and to the mechanical industries, leaving aside the prostheses necessary for the small work of many artisan trades or for those connected with office work.

It has been repeatedly observed that the mechanical artificial arm should above all be an auxiliary of the sound arm and where possible to it should be entrusted the functions of minor importance and precisely the functions of the left hand.

This may be accepted as a general maxim, but not as a fast rule; experience teaches us that if many workmen succeed with great or relative ease and rapidly become "left-handed," there are many who learn this functional adaptation with great difficulty or do not succeed at all, for which reason a good mechanical prosthesis should be able to adapt itself both to the functions of the left as also to those of the right hand, in a determined work.

On the other hand, one cannot pretend with the present condition of the prosthetic technique of an artificial mechanical hand an excessive and too varied number of movements, because one of the first and essential conditions of such kind of apparatus is the *simplicity of the mechanism*.

However, the tendency to simplify the prosthesis, according to my humble judgment, should not be pushed to excess.

All of us have been able to prove that the tendency of disabled men to do without the embarrassing prosthesis often prompts him to work in unfavourable conditions; to all of us have had occasion to observe cripples minus the upper limb intent on working with the shovel, availing themselves of the stump of the shoulder and the lever movement of the handle of the instrument, but everyone should recognise that working under such unfavourable conditions is not advisable, and that we should persuade the disabled man of the convenience of providing himself with those auxiliaries that may alleviate the fatigue and render the effort more remunerative.

Also, in Italy* as in France (Aubert) and elsewhere (Spitz), one has attempted to reduce to the simplest form the working auxiliaries.

I limit myself to mentioning the straps intended to substitute all prothetic apparatus in agricultural labour; no doubt that when these are well studied and arranged, the disabled man can manage any agricultural implement, but it is also beyond contestation that with such means of purchase the implement enjoys minor mobility in certain directions and cannot be fixed as securely as required in certain phases of the work, for which fact the strap or any combination of straps give disadvantageous results in respect to other apparatus, for example, the Julian apparatus or to the functional limb made by the *Officina Nazionale di Protesi* (National Workshop for the Construction of Protheses), which we shall have occasion to describe later on.

Other essential conditions which are required of the mechanical prothesis are those of complete functional independence of the sound hand, and of the maximum respect to all the residual physiological movements in the amputated stump.

The disabled man is with difficulty trained to work with the stump in a forced attitude, being unable to restrain the instinctive improvised movements which are in contrast with that which the grip of the implement performs; his work under such inconvenient conditions, especially in his apprenticeship, becomes thus frequently disturbed, and this alone may prompt him to abandon the work.

If it is just, if it is our duty, to persuade the cripple of the necessity of making the effort to try and work with an artificial limb, it is so much the more important to avoid all factors likely to exaggerate the feelings of impotence already so profoundly rooted in the spirit of the greater number of gravely disabled persons.

In short, the mechanical prothesis should not require the assumption of forced attitudes abnormal to the body, obliging the labourer to assume working postures diverse from those that the workman in that special trade has the custom of assuming.

Every operation of a trade is bound up with a chain of movements in the performance of which the body and the limbs constantly assume special positions that the exigence of the mutilation, the necessity of the prothesis or the modification of the tool, with the object of improving the fitness of the disabled men for the work, should disturb to the least possible degree.

An ultimate condition should be required of the prothetic organ adapted for manual labour; it is necessary that the appa-

* Bottari—Apparatus for facilitating one-armed crippled workmen the use of labour implements. Bulletin of the Federation of the Committee of Assistance, &c., &c. No. 12.

ratus be strong so that the workman can rely on its resistance to the strain, and easily repaired, so that its damage does not occasion a harmful and too frequent interruption of work.

II.

Having referred to the principal questions of a general nature appertaining to the mechanical prothesis and to the essential conditions to which they should respond we have now to enter on the examination of the chief component parts of the prothetic organ. In this we have to distinguish:—

- (a) *the means of attachment,*
- (b) *the gripping organ.*

(a) *Means of attachment.*—It is beyond doubt that the most ingenious toolholder is rendered useless if it is not able, in the most complete manner, to obey the movement that the stump desires to impart to it, and to remain firmly adherent to the latter, whatever may be the forces that tend to shift it in all the movements of manual work.

The experience encountered with the most rational form of armlet of attachment constructed for this object convinced us that none of them hitherto absolutely responded to these essential conditions of the mechanical prothesis.

And truly the problem is not an easy one to be resolved owing to the changing morphologic functional conditions of the stump of the arm during the manual work, either owing to their habitual conoidic shape, especially in the stumps of forearms, or owing to the modification of volume and of shape, to which they are subjected during manual work, or, finally, owing to the necessity that the muscular contractions are not fettered in their energy by the organ of attachment.

These difficulties connected with the attainment of complete utilisation of the residual muscular force in the stump naturally increase in proportion to the brevity of the stump, if it be desired that the transport of the force from the stump to the prothesis be effected in favourable direction and without excessive loss of force and without atrophy of the residual muscular force. With the ordinary means of attachment one often observes that the short stump either escapes from the armlet or is hindered in its movements by artificial arrests in opposition to the muscular contractions or to the liberty of its movements.

In this regard we must bring under notice two recent innovations in this important part of the mechanical prothesis:—Above all the shoulder belt of Putti which represents a rational perfecting particularly adapted for those cripples with mutilated arms, inasmuch as while assuring the most secure attachment, it allows to the arm its physiological mobility both in the sagittal plane as in the front plane.

In this device the transport of the force from the articulation of the shoulder to the prothesis is carried out always in a favour-

able direction; and the load of the prothesis is conveniently and rationally distributed to the shoulder belt and to the body in manner that same is always easily tolerated.

Another rational apparatus of attachment was constructed by the Officina Nazionale di Protesi for its new mechanical limb.* The armlet is constituted by a series of thin metallic rings joined together by three strips of leather reinforced by metallic sheets, which maintain their parallel and equi-distant positions. These rings are not closed, but alternatively hinged by their extremities to an elastic cord. The great simplicity of this apparatus is equal to its efficaciousness.

This system of attachment, prompt, reliable and rational, has proved itself really answering to its important function.

Its superiority is due to the fact that the metal rings slightly sinking into the soft parts of the stump create between them small skin cushions which absolutely prevent the sliding or shifting of the armlet to such a degree as to allow of the cripple raising with the stump considerable weights and to perform all those alternative movements of labour which usually occasion the shifting of the armlet in all the mechanical prostheses hitherto adopted.

On the other hand, the elastic nature of the lacing does not in any way prevent those modifications of shape and of volume due to the muscular strains and to the diverse attitudes of the stump in the various operations of work.

In order to render the grip still firmer, the lower portion of the ring sleeve which is applied to the arm is constructed in a special manner in order to compel it to stop at the projection constituted by the skeleton of the articulation of the elbow in its posterior face.

Only in those special cases in which the cripple has to perform work which compels him to exert frequent and considerable efforts of traction or of raising considerable weights, it has been found opportune to add to the armlet a shoulder belt which distributes over a more extended surface the excess of traction.

This new armlet is tolerated very well by the disabled man, who even keeps it applied for more than 24 hours without the least inconvenience.

Finally, it is worthy of note that even in cases of amputation above the elbow the armlet obviates the necessity of using a shoulder belt leaving to the disabled man the greatest respiratory liberty.

(b) *Gripping organ*.—In all times, and still to-day, many inventors have studied to construct mechanisms aiming at sub-

* Officina Nazionale Italiana di Prothesi. An apparatus adapted for manual work for cripples with amputated upper limb.

stituting the human hand in all its marvellous and manifold functions, with the fingers and the phalanx independent and all their numerous articulations and opposition of the thumb, &c.

Now, it is precisely to this tendency to the "anthropomorphism" of the mechanical prothesis as it was justly designated by Vanghetti* that we owe the slowness of the progress in this branch of the prothesis.

The most perfect types of artificial hands capable of grasping clear proofs of the inventive genius of the human brain will, with difficulty, be surpassed in the perfection of their mechanism, but if they constitute something more progressive than the ordinary esthetic and inert hand, namely, a hand which permits of grasping with sufficient firmness objects of various shape for the ordinary needs of life, will never be able to constitute a gripping organ adapted to take hold of and to grip with sufficient energy a tool and to perform with it a really productive work.

Apart from the circumstance that at the present state of the prosthetic science, these hands are delicate organs, fragile, costly, not even the best among them will perhaps ever give the movements of pressure, sufficient, precise and adaptable to the shape of the object which the hand should grasp.

Instead, the principal requisites of the gripping organ in an artificial arm capable of work are essentially the firmness and the rapidity of the grasp on the tool.

It is, however, of capital importance not only to grasp firmly the tool but also to substitute it, reducing to a minimum the interruption to his work for this operation, so that the other causes of deficiency inherent in the man with a mutilated arm are not aggravated.

The conviction of the deficiency of the systems hitherto adopted explains in great part the prejudicial resistance which the disabled man opposes in general to applying himself to a manual trade and explains why the disabled who do take up such work with great faith in the success of their efforts afterwards abandon it, owing to the disadvantages caused by the interruption of their productive activity, should cause the technicians to devote all their studies to the perfecting of the functional prothesis to promote rapidity and ease in changing the tools.

It does not suffice, however, that the grip on the tool be firm and its substitution rapid, thanks to rational opening and closing devices; it is also necessary that from the firmest hold the tool passes to more ample degrees of mobility so as to allow of inclining and fixing the tool, if necessary, in all the planes of the space, and also to work with it, in certain moments, completely loose without releasing the grip.

* Vanghetti.—Treatise on the cinematic prothesis at the Italian National Assembly for Assistance to War Invalids. Empoli. 1918.

Also with the greatest possible simplicity and with the maximum of substitution or modifications of the grip the functional prothesis should satisfy all the movements of a special class of manual work.

It is indeed because the universal pincers proposed hitherto rarely satisfy these conditions that they have not met with unanimous approval, whilst the functional protheses created for specially appointed work have met with more success.

But on the other hand the too complete relinquishment of the idea that the creation of the universal pincers has inspired should not signify the acceptance of the idea of those who would wish to dis-associate all the movements performed by the workman in special manual work, arriving at the opposite excess of creating a tool for each function.

Too great dis-associations would mean the multiplying of the tools and necessarily complicate the functional prothesis and constitute an excessive embarrassment to production.

Indeed the artificial hand should impose the least possible modification of the series of tools in use in each trade.

The artisan who exercises at home the trade that he has learned in the training school, the cultivator who returns to his fields can, for once in a while, without great inconvenience, alter the tools which they are accustomed to use, but the mechanic or the carpenter who has to work in a workshop or factory should not have need of tools which vary to a notable degree from the ordinary working tools unless it be desired to place the disabled workman in an unfavourable condition in respect to his employer and of visible inferiority in respect to his fellow workmen, and diminish those conditions of complete independence which is one of the factors of his redemption

Before closing this chapter I must refer to a question regarding the technical construction of the prothesis for mutilations of the upper limb.

The question of the seat of the mutilation in like manner, as it has great importance from the point of view of establishing the direction and branch of training and of the working capacity of the disabled pupil, also creates diverse conditions for the prothesis, according to whether the mutilation has its seat below or above the elbow.

In the latter case the prosthetic difficulties are much more pronounced.

And, nevertheless, there exists uncertainty amongst the technicians as to the convenience of introducing into the system the artificial articulation of the elbow as also in regard to the manner of opening and of attachment in the various useful angles.

Undoubtedly this addition to the apparatus extremely complicates the work and creates difficulties to the workmen, obliging

them to make use too often of the sound hand, which results in a great loss of time and prejudices his labour production.

For a great number of manual trades a stump of the arm well exercised and endowed with a complete liberty in the movements of the shoulder is able to perform all the labour operations without a forearm, and I deem that in all possible cases it is preferable to couple directly the toolholder to the terminal dome of the armlet.

Where it is considered advisable to add a forearm it is always preferable to use an articulation that allows of the fixing of the artificial forearm in all the degrees of rotation and of flexion by a simple mechanism, strong and rapid.

Such are in their general lines the requisites of the mechanical auxiliaries for disabled men doing manual work.

III.

We shall now give a rapid glance to the new types of functional prostheses which have been invented or applied most recently in Italy, endeavouring to submit them to a critical examination.

We should naturally limit ourselves to those items which represent really a novelty or an essential perfecting of existing types, leaving aside all those which are deemed a simple modification in detail of known types, both Italian and foreign.

We shall also omit the critical analysis of the new tools that have been proposed or of those which represent a perfecting of types already known, because we believe that their examination would amplify to too great an extent the theme which we have proposed ourselves, already very vast and complex even though kept within the limits imposed by ourselves.

For greater clearness and order in this report, it seems to me opportune to divide the functional prosthesis into two groups:—

1st—*Passive Prostheses.*

2nd—*Active Prostheses or Cineprotesi.*

With the designation of *Passive Prothesis*, I will refer to those apparatus which have no other function than to constitute the organ of transmission of the movement of the stump to the tool.

Active Prothesis or, according to the very rational terminology of Vanghetti* *cineprotesi*, those that utilise any residual movements, in order to reproduce those naturally lost.

1ST—PASSIVE PROTHESIS.

The Officina Nazionale Italiana di Protesi of Gorla Primo (Milan) (the Italian National Workshop for Prostheses) has con-

* Vanghetti, Report on cinematic prostheses at the National Convention for Assistance of War Invalids. Empoli, 1918.

ceived and constructed a new functional limb,* which, as experience goes to prove, represents a real and considerable progress to many which were hitherto proposed.

Its model, in a recent competition for functional prosthesis, was classed first by the technical jury among 103 competitors.

The Officina Nazionale began its experimental researches studying the movements of the arm in the most common labours and on one of the most indispensable utensils, thus succeeding in establishing for each of them distinct groups of movement; a first group comprising the simplest exigences in which the tool had to be grasped firmly and maintained rigid in a pre-established direction and almost constantly in a line corresponding with the axis of the forearm.

In a second group there was the functional exigence of the rigid grip, but with supplementary movements (chisel) to bring the tool into various directions.

Moreover, in the greater part of the work the tools, although requiring a complete solidity with the stump, should, during their use, be able to perform movements of rotation corresponding to the manifold movements of the articulation radiocarpic which is developed in all the planes of the space (flexion, dorsal, palmar, radial and cubital pronation and supination).

These experiments led to the discovery that only realising the conditions that the grasping of the tool at once actively rigid and easily mobile in all the planes of the space, it would be possible to obtain that continuity between the arm and the tool that constitute in work a unique organ.

The solution of the problem was found by giving to the handle a spherical form and creating a special vice, constituted by a ring, which has a concave surface, with which the sphere is embraced. The vice is opened and closed easily by means of a lever pawl (*A*), a screw diametrically opposed (*B*) adjusts the fixing of the grip and permits all the graduations in its mobility, from the most absolute rigidity to completely loose play.

The operation of grasping and changing the tools is rapidly performed even without assistance of the sound hand; it is sufficient for the purpose that the cripple may have fixed to the work bench a projection which offers a point of support to the extremity of the lever which opens and closes the vice.

Such a prosthesis works also excellently in the case of stumps amputated near the shoulder and can be adapted besides to partial amputations and to all the functional mutilations of the hand.

To sum up, this new prosthesis substantially realises those conditions which we have declared essential for responding to the

* Nouvelle prothèse de travail pour les mutilés du membre supérieur. "Revue interalliée," No. 1, 1818. Paris.

functions of an artificial arm adapted for manual work, inasmuch as it can be firmly fixed on the stump, is strong, simple in its mechanism, leaves complete liberty of movement to the stump and to the workman, ensures a firm and rapid grip of the tools in all the planes of the space and with all the most ample graduations in its fixing, and finally does not implicate the use of special tools.

The experiments made in the most varied manual work have proved the great practicalness of the new prothesis and the disabled soldiers, who are already making use of it, show themselves very satisfied.

The moderate cost of such apparatus is another advantage, which, if not of capital importance, is a consideration not to be neglected.

For the mechanical industries the head technical instructor of the workshop annexed to the school for training disabled soldiers and sailors in Gorla Primo D'Adda has invented a functional limb for *machine adjusters* which presents uncommon advantages.

It has been studied carefully in every single detail. Also in this apparatus we find the application of a sphere at the extremity of the armlet, which is provided with gaps of shape adapted to the various tools which the machine adjuster employs in his work. The apparatus permits also, by means of a spring closing device, the fixing of the chisel.

The instrument of the "Adda," fitted with a spherical swivel in the union to the armlet, is being experimented with in the School for Disabled Soldiers and Sailors in Gorla Primo, and it has proved itself to be of real practical use to the disabled man inasmuch as it allows him to perform, by the aid of the other hand, many, if not all, the operations required in the work of adjuster.

Also meriting serious consideration is a gripping organ for men deprived of the arm invented and constructed by Casanova of Bologna.

It consists of a work pincers, one of the movable jaws of which is made of a mesh similar to a multiple Gaul's chain which can be closed completely on itself by a screw controlled by the sound hand of the disabled man and allows of pressing in a firm manner the handle of the tool against the fixed jaw.

The whole can be inclined around an axis and is applied to an armlet by the intermediary of a sphere.

The attachment of this apparatus may be at will rigid, or can give to the pincers a certain oscillation for not too great strains.

The essential advantages of this ingenious apparatus are a great firmness of grip and its adaptability to objects of the most diverse shape, which approaches in its function of grasping to that of the natural hand.

A further quality of the instrument is the extreme rapidity of closing, for which reason it may be assumed that its eventual perfecting will render the pincers likely to be largely adopted for the mechanical work of disabled men.

Zumaglin and Guidi (Turin)* have proposed a universal pincers capable of grasping any object and guiding it in any direction by means of a spherical application fixed to the stump which merits special attention because it shows an accurate study and is adapted to practical application when perfected and a few inconveniences remedied.

The gripping pincers are constituted by two arms joined together by a screw with a counter thrust spring. The screw serves at the same time for closing the pincers on the ball swivel and the tool-holder, so that it is not possible to give the pincers a rotary movement on the swivel during the work, because in such case, having to loosen the fixing nut, the grip of the tool remains also loose.

Further, in the system described, the pincers can be closed firmly on the swivel by means of incisions which the constructor has provided on the sphere in order to increase the friction, but it is to be feared that the sphere is too quickly subjected to wear and loses its primitive shape; thus the closing would become problematical.

But it will not be difficult for the constructor, who has shown a clear knowledge of the problem to surmount these inconveniences and to render the pincers more useful for the purpose intended and more near to perfection.

There is another device belonging to this group of functional prothesis which we desire to refer to inasmuch as it presents some constructional details realising some of the requisites which we have established as indispensable for a correct function of the prothesis.

This is a prosthetic arm invented by the orthopedic workshop annexed to the important institute for training disabled soldiers and sailors in Palermo.

It is constituted by an armlet which approaches in its shape and in its function to that of the functional limb of the Officina Nazionale di Protesi in Gorla Primo, to which is united a tool-holder with a spherical swivel which, if it does not allow by reason of its means of fixing the inclination and the mobility of the tool as much as might be desired, should, however, satisfactorily realise working conditions, and after successive inevitable improvements, will be able to constitute a good functional prothesis.

* Zumaglini.—Universal pincers for cripples with one arm. *Bullettino della Federazione Nazionale Italiana dei Comitati di Assistenza ai militari ciechi, storpi e mutilati*. No. 11. 1917.

2. FUNCTIONAL CINEPROTHESES.

It is intuitive that the creation of an artificial functional arm actuated by an active and voluntary force is the true object to which should tend the efforts of all persons studying this question.

We should, according to Vanghetti, distinguish two forms of cineprotheses: the *mechanical cineprotheses*, in which occurs only the mechanical transmission of natural residual movements, and the *surgical cineprotheses*, which are operated actively by generative motors, painful or non-painful.

(a) *Mechanical cineprotheses*.—The protheses of this group up to the present applied and which to our knowledge do not seem to have realised the conditions which we have shown to be indispensable for effecting a not too arduous manual work.

The origin itself of the active movement is with difficulty reconcilable with one of the most essential of our premises, according to which the protheses should not engage useful movements of the stump, or movements of other articulations or of the body.

The transmission of the active force from distant points of the mutilation consequently implicates automatic control by means of cords and metallic levers which cannot give very satisfactory results owing to the loss of force by friction and the length of the path to be travelled and by the wear and the liability to damage of the cord transmitting the force.

All the mechanisms hitherto known which serve for the purpose, besides being very delicate and incapable of movements of great strength and of firm grips, may be for the most part considered of some advantage as hands for asthetic purposes or present some usefulness for those disabled men who exercise independent professions. Few of these types have been studied in Italy.

The model of Professor Pedrazzoli is worthy of a word of encouragement. Professor Pedrazzoli had created, in 1916, a very rational and practical device for the transformation of the rotary movements of the stumps of forearms in the movements of grip.*

The A. has now considered particularly the properties of their mechanism for the transformation of the movement (which, by being obtained by a system of inclined planes of long extent acting on a tie rod of much smaller travel, increases the force) in order to apply the system to a hand functioning like a tool either in the form of a pair of pincers, the jaws of which are kept closed by a spring, whilst the stump acts only for

* Pedrazzoli—Artificial hand for grasping. Bulletin of the Italian National Federation of the Committee of Assistance for War Invalids. September, 1916.

opening them by the supination; either for operating a pair of pruning clippers or ticket punches for railway conductors, &c., &c.

The new functional cineprothesis has not yet been experimented, although the principle on which it is based contrasts with the general prejudice against the employment of physiological movement of the stump which has also prime importance in all manual work, it is however worthy of study and of experiment, either because the rotary movement of the stump which is employed in the grip may in part be compensated by movements in the functional articulations of the arm, or because further improvements may diminish the inconveniences of the system.

I must not neglect to mention the ingenious invention of another apparatus which, I believe, may, by the novel principle of its system, be fruitful of results which may eventually have great importance.

I wish to refer to the *mechanical hand closing by hydraulic means of Vianello (Venice)*.

This really characteristic mechanical hand is formed by two jaws, one of which reproduces the external shape of the finger and the other movable by means of hydraulic pressure.

The water pressure is brought to the hand by a rubber tube which communicates with a tank and a small pump applied to the heel of a boot.

Standing on tiptoe and pressing on the heel the water is brought to a certain pressure depending on the area of the piston and on the pressure exercised by the foot.

To obtain the complete travel of the movable jaw, 10 to 20 blows with the foot is required.

To open the jaws the pump is provided with a suitable valve operated by the rotation of the foot on the heel, which allows the hand easily and quickly to let go the tool.

The cripple provided with this apparatus succeeds in gripping firmly the most varied tools and also to work, performing considerable strains, which for the rest appears evident from the simple enunciation of the principle on which is based the apparatus.

No doubt if later on some improvements are introduced into the apparatus which will have for effect to better harmonise the pressure on the jaws with the stroke of the piston and to improve the closing of the jaws, this original type of mechanical cineprothesis may be largely used for manual work by disabled workmen.

(c) *Surgical Cineprothesis*.—It is not here my task to show the value of the plastic cinematic, which for the rest is universally known.

From the point of view of the working prothesis there is no doubt that to the clever idea of Vanghetti is reserved the best solution of such problem as far as the only and the true physiological solution renders it possible: to the progresses of the cinematic plastic will be due the merit of having reduced in extraordinary measure the importance of the functional damage of the loss of the hand; in front of surgical cineprothesis should gradually yield the field any method of mechanical cineprothesis.

But, unfortunately, hitherto the surgical technique in the creation of plastic motors which, from the cinetic and dinamic points of view are very valid, has greatly surpassed the prosthetic technique in the construction of prothesis which permit of exploiting all the energies.

Hitherto the examples of surgical cineprothesis which have come to my knowledge all presented all the form of the grasping hand which we have demonstrated cannot at the present condition of the prosthetic technique constitute an efficacious working organ for the manual trades which require little considerable effort.

Vanghetti,* with the name of "*Ideal cinematic hand*," describes an artificial hand formed of three groups of fingers, each of which moved in flexor and extensor from its respective alternate loop.

Certainly, such cinematic organ might modify our judgment on the practicalness of the anthromorphic prothesis, but on the other hand, the experience of the many who have tested this field of modern surgical orthopedia informs us that for the present such operatory result remains in the field of aspirations, however legitimate after the progresses already made.

For the present the best result, as far as I can see, is obtained in the creation of a double plastic motor.

I am not aware that as yet anyone has formed an exact knowledge of the working value of a plastic motor provided with functional prothesis, for which reason I do not believe it will be deprived of all interest to communicate my results obtained with two cinematised supplied with a new and very rudimentary type of working cineprothesis.

The experiment was made in the case of two men with amputated arms, one with an arm amputated above the elbow and the other higher up in the middle of the arm, both provided with two plastic motors.

* Bulletin of National Federation of the Committees for Assistance of the blind, crippled and mutilated. 1916. No. 2.

Both were applied to manual work after many months of exercising with the ergograph, designed by us for this purpose and we need not describe it here.

The experimental researches performed with the apparatus had convinced us that in principle and by a long period of exercising it is not rational that the cineprotised maintain actively the grip on the tool with the permanent contraction of the cinetised muscle.

As go to demonstrate our other researches, which are in course, regarding the physiology of the motors, these get fatigued at an early date. On the other hand, wanting, unfortunately, in the function of the organ which animates the sensibility, a long period of exercising is necessary before they regain a muscular sense perfect enough to render the grip which they effect constant and firm.

It is due to this fact that we have found it necessary to limit the performance of motor to the functions of gripping and of letting go the tool, entrusting the grasp during the work to a mechanical arrest.

When the work is finished, or for changing the tool, a new contraction releases the mechanical device from the position of arrest and a recall spring releases the tool.

Certainly, it is to be presumed that by improving the functional quality of the motors for energy, amplitude of excursion and muscular sense may be arrived at in its active continuative function during the work.

The apparatus which we have for the time being applied (constructor, the Head Technician of the Orthopædic Workshop of the Institute for Rachitis Narcisco Castelli) consists of an armlet with metallic bars (A.B.), suspended to the body by means of a very simple system of straps arranged around the shoulder strap and the trunk.

Owing to the brevity of the stump and to assure the attachment of same to the prothesis without hindering the muscular traction the armlet terminates in a dome (C) which embraces the apex of the stump.

The two staffs are fixed to a disc (D), to which is coupled the toolholder by means of a grooved plate provided with an arrest (E).

By means of a tie rod attached to the muscular loop of adjustable length, the cripple opens and closes the arrest which fixes the handle of the tool to the toolholder and can give it the desired inclination in three diverse directions.

If the various tools are fixed in a rack within close reach of the stump and at the desired height, it is possible for the cripple

to effect the voluntary grasping and releasing of the tool without the aid of the other hand.

The cripple who is applied to mechanical work makes use of the stump of the left arm for the grasping of the point of the file, placing, as is logical, the sound right hand on the handle of the tool.

Both the file as the other tools (chisel, drill, calipers) are supplied with a device constituted by two small plates which can be fixed by screws, one of which is adjusted for flat filing, the other is spherical for round filing.

The other soldier was for experiment supplied with a cineprothesis provided with articulation at the elbow for the movement of which presides the two flexor and extensor motors, but the experiment demonstrated once again that for purposes of manual work in the case of stumps of arms the application of the tool-holder directly to the extremity of the stump is preferable, suppressing the articulation of the elbow and the forearm.

Both these cripples are provided with grasping cinematic hand.

IV.

MECHANICAL PROTHESES ADAPTED FOR MANUAL WORK FOR FUNCTIONAL DEFECTS OF THE UPPER LIMB.

In addition to the disabled, also the wounded, who, in consequence of a nervous, muscular, articular or bone affection, have suffered a diminution or total loss of the working capacity of the upper limb, should be provided with a mechanical prothesis which permits them to recuperate completely or in part the deficient or lost function.

In this group of protheses either the orthopædic apparatus devised for the pseudoartroses of the various skeleton segments, the tutors of the extended parts of bone substance, etc., etc.

I do not deem it opportune to dwell on the numerous varieties of orthopædic apparatus advised and experimented in all these cases; it is a task that the orthopædic technician performs now, one can say, in a manner so perfect as to compensate the most grave skeleton and articular defects, and to suppress or to reduce to the least degree the functional incapacity.

On the other hand, it seems to me opportune to make a brief reference to the working prothesis which it is well to apply in cases of nervous paralysis which have attacked the upper limb, because it very often happens that one does not always proceed in time to provide for re-establishing with a suitable prothesis the working capacity of this numerous group of disabled.

Whilst the problem is, one may say, resolved in the case of paralysis of the radial, it is not an easy question to intervene efficaciously with mechanical aids in the case of functional defects provoked by serious paralysis of the cubit.

It is worth while, therefore, that be cited here the apparatus created for this purpose by the *Officina Nazionale di Protesi*.*

It is known that the functional disturbance consequent to the paralysis of the cubit is characterised, besides the abolition of the adduction of the thumb, by the insufficient flexion of the first phalanx, and by the extension of the second and third phalanx in the case of interosseous and lumbrical affections.

The apparatus constructed by the *Officina di Protesi* with a system of small levers operated by elastic traction corrects the contraction in extension of the first phalanx and extends the other two.

Such apparatus already experimented in several cases has not only demonstrated that it can realise an efficacious prophylaxis of the deformity but that it is also capable of giving back aptitudes to work which owing to the deformity had disappeared.

It has the advantage of leaving free all the residual movements of the hand and for this reason it is to be considered a good working prothesis in the true sense of the word for this group of disabled workmen. In the functional deficiencies which owe their origin to multiple affections of the peripheric nerves of the upper limb or to affections of the plexus at its root more than in any other case the general rule should be followed that each prosthetic apparatus should be individualised and studied case for case.

In the total paralysis of the hand it is possible to apply working auxiliaries which allow the man to perform a certain amount of work, but as a general rule it must be affirmed that there still remains a great deal to be discovered in this field of the working prothesis and it is to be hoped that it will be the object of a more intense study on the part of technicians, taking into account that the number of those rendered helpless by the effect of grave functional affections contracted in war, represent certainly a considerable portion of all the causes of Disablement.

The preceding statement, although necessarily summary and incomplete, will suffice to demonstrate that the contribution of Italian inventive skill in the solution of the grave and difficult problem of the functional prothesis is really gratifying and represents in the various studies, although not yet brought to that perfection which render them really practical, a sure promise for the future.

Certainly, the researches, the experiments and the studies which are being so energetically undertaken by all the nations at war will result in a noble competition which is most essential for the bettering of the lot of our glorious disabled soldiers as it

will offer them very soon the advantages of those mechanical auxiliaries which will enable them to enter once more in the ranks of the free labourers and to contribute to the economic rebirth of the country for whom they have so nobly shed their blood on the field of honour.

But to arrive at this promising result it is necessary to repeat once more that in order to make headway in the technique of the functional prosthesis adapted for manual work, the studies should be followed on a strictly experimental basis, undertaking researches and classifying the single movements of the one or the other arm in all the movements of every manual work, establishing for each trade the classical attitudes and the vicious attitudes of the body and of the limbs, making the frequency of the rhythmic returns of the same movement, analysing the directions and the constant axes according to their development in the various phases of the work, etc., etc.

In addition it is necessary to appeal by all efficacious means (Meetings, awards, etc., etc.) to all those competent who are capable of giving a valuable contribution to the solving of the problem, canvassing especially the collaboration of engineers and mechanics and of the disabled men themselves.

But in order to attain this result it is necessary to have the willing and active co-operation of the disabled men themselves to promote which it is indispensable that there be strongly developed in them a more elevated sentiment of human dignity, a more rigid conscience of their duties towards their Country, and it should therefore be the chief task of the teachers and of the public to call forth the moral and intellectual energies of the disabled man, which are undoubtedly of greater value than physical energies, in order that they may persuade themselves of the necessity that they also direct all their efforts to attain the ideal to which all aspire, namely that all those with crippled arms become once more useful and productive units in the work of the community at large.

It appears opportune for us to sum up below the various theses sustained in our report.

Conclusion.

1st. In establishing the branches of training to be given to cripples with an amputated arm in order to fit them for the mechanical trades it is necessary to follow rigorous lines in their selection in respect to the gravity of the mutilation in order not to ask of the functional prosthesis more than it is able to give.

2nd. The alteration of machine tools for the employment of disabled workers in mechanical trades is not to be encouraged.

3rd. The working arm should be able to adapt itself both to the work of the right hand as to that of the left hand in every kind of manual work; it should be simple in its mechanism; it should allow the stump the maximum functional independence

of the sound hand and should respect the physiological movements of the stump, it should not compel the cripple to adopt forced attitudes, finally, it should be strong and easily repaired.

4th. The essential requisites of the working prothesis are: Secure attachment to the stump, firmness and rigidity in grasping the tool; possibility of adaption in all degrees of mobility of the tool up to its complete fixing in all the planes of space; possibility of satisfying all the movements of a trade without imposing exaggerated modifications of the tools commonly adopted.

5th. The problem of the working prothesis for functional helplessness should be studied by the technicians with more thoroughness and promptness.

6th. In order to realise decisive progress in the technique of the working prothesis it is necessary to adhere in the studies to the path strictly experimental appealing for co-operation to all those competent and capable of bringing an adequate contribution to the solution of the difficult problem.

7th. It is indispensable in order to attain the ideal towards which we aspire, to endeavour to obtain the willing and active co-operation of the disabled themselves.

EXACT CONSTRUCTIVE DRAWINGS OF THE PROTHESIS AND ORTHOPÆDIC APPARATUS FOR THE LOWER LIMBS.

By Professor R. GALEAZZI.

In the prothesis for amputations below the knee, the leg case is attached to the thigh case by means of two articulations that constitute the ideal axis of the prothesis for the flexion and extension of the leg on the thigh.

Those with technical knowledge know that the principal defects in the working of the prothesis for mutilated legs are due to the functional defects in the prosthetic articulation owing to the wrong position of the hinges in respect to the articulation of the knee.

When the hinge is applied too low in respect to the articular centre, the leg case of the artificial limb, in the flexion of the knee, is displaced forward of the stump, whilst its posterior margin pinches the flesh of the calf; conversely, when the hinge is placed too high, the leg of the prothesis in flexion is displaced posteriorly and it exerts with its anterior wall an annoying pressure on the tibia crest of the stump.

The apparatus is equally defective when these hinges are maintained too far forward in respect to the middle frontal plane of the limb, because the stump sinks excessively, thus causing it to exert pressure on the tibial condyle, or, when the hinges are placed too far behind, the stump is pushed out of the leg case during a sitting position.

Consequently this has given rise to discussion among doctors of orthopædia as to what should be considered the correct position of the hinges. Empirically, the greater proportion of orthopædic mechanics hold to a horizontal line passing through the middle part of the patella.

Cocht instead marks the articular line of the knee at a level of 30° lower than the patella, and establishes the seat of the hinge in the central point of the external half of the horizontal designed on the knee at this level.

Hendrix fixes the axis of the knee on the condyloid tuberosity, taking as starting point the inferior extremity of the patella, and fixes the two hinges at the union of the $\frac{3}{4}$ anterior with the fourth posterior of the contour of the knee.

We wished to attempt this problem and directed our researches with the object of furnishing the constructor-mechanic with an

apparatus of prothesis for mutilated legs or an orthopædic apparatus articulated at the knee, a means that with sufficient pressure avoids the inconveniences of the ordinary empiric directive.

Of course it was well known to us that, owing to the anatomic fact that the evolving curve of the articular superficies of the femur does not represent a sphere but rather a spheroid with radii decreasing from the front to the back, and also that for the inequality between the two condyles in the superficies and in the radius of the curvature, and finally for the certain fact that the femoral condyles in the flexions of the knee do not limit themselves to rotating on the tibial platform, but likewise submit to a slight slip forward, the axis of the knee articulation cannot be fixed, but must displace itself and follow the movement of the condyles.

Consequently we knew beforehand that our researches would give no other solution than determining upon a conventional axis as had been established by Martin and Cruveilhier.

Undoubtedly the ideal would be that of being able to obtain an automatic displacement in the artificial articulation, as theoretically we must admit takes place in the living flesh; but beyond this being a problem extremely difficult to solve, it would lead us to undesirable constructive conclusions.

This has been demonstrated by Marek by his system of mobile metal rods on a leather thigh case which permits the thigh to displace itself in the flexion of the knee, a system which offers great inconveniences that have never allowed it to be of practical application. The ingenious attempt of Dueroquet has confirmed it: he created an articulation that allowed the extremity of the femoral rod to follow the displacements of the condyles in the movement of flexion. The author himself has had to recognise in the course of his experiments that it gives no practical result.

The study of the question has, however, convinced us that in the creation of a prothetic axis the function and displacements of the natural axis of the knee formed a very arduous problem, but at the same time one so interesting and seductive as to be worthy of being confronted in all seriousness.

But the task that the "Officina Nazionale di Prostesi" has undertaken is for the present much more modest: it limits itself to seeking the most practical and rapid means by which the orthopædic mechanic may establish in his apparatus the prothetic axis with the nearest approximation possible. Since for the displacement backwards that the articular superficies of the femur undergoes which is found in the flexion in the right angle in a plane further posterior than in extension and for the displacement upward consequent on the volute form of the condyles, it must be retained that the articular axis oscillates between C and C¹. From this the hypothesis was advanced that a method which should succeed in establishing the hinges in a point intermediary between these two extreme points would reduce to a minimum the

inconveniences attached to an immutable centre of the prothetic articular movement.

In order to obtain a solution we thought it would be necessary :—

- (1) to put ourselves in identically the same conditions as the prothetic apparatus works, with a reproduction of those resemblances that intercourse between the limb of the disabled man's leg and the prothetic apparatus in all phases of movement of the leg on the thigh;
- (2) that the method ought to be strictly individual, bearing in mind the researches of Allby and Albrecht and those of Hüter, which established that in the curvature of the femoral condyles notable individual differences exist which demonstrate that all geometrical constructions created for the establishment of a universal standard for the prothetic axis of the knee must of necessity give rise to proportional errors to such differences and that only a method founded on individual measurements can be right.

Basing ourselves on the foregoing judgments, we herewith give a brief and graphic account of the work done by us.

As a rule it is necessary in every case to proceed in this quest as much on the mutilated leg as upon the whole one.

On the two thighs a light binding with bands of plaster is first applied, well modelled on the condyles and sharpened at the extreme inferior in such a way as to allow of the complete flexion of the leg on the thigh without danger of the bandage being displaced.

The patient is then laid on the opposite flank to the articulation upon which the experiment is to be made.

The articulation to be measured is supported on a common drawing table upon which a sheet of drawing-paper has been fixed with pins.

Before beginning the operation, care must be taken that the position assumed by the patient is such as to permit the movements of the articulation to turn in a perfectly horizonat plane, so that the pelvis shall have on its flank of support a normal position to the plane itself. Then successively the leg is fixed in flexion of about 100° - 120° .

At the extremity of the stump or of the normal articulation a pencil is attached by an appropriate apparatus that is fixed by means of a belt to the stump or leg. Hence the whole of the thigh is maintained absolutely immobile while, thanks to a square support, the leg on the thigh is deflected to complete extension. The pencil will draw a curve on the paper. This curve is divided into sectors which are geometrically substituted by the approximate arcs of a circle. The radii corresponding

to such arcs of a circle intersect one another at points near the prosthetic centre.

Then with compasses or a square the radials can be traced in the point of intersection from which the prosthetic centre has to be found.

Numerous experiments carried out by this system on men who were whole, or mutilated or affected by lesions of the most diverse kind, have given us with singular regularity either a single centre or two centres extremely near to each other, between which it was easy to establish the intermediary centre approximately exact.

In the prosthesis apparatus constructed faithfully according to the instructions in respect to the prosthetic axis, not only were there no inconveniences to be complained of, but also in several of the cases in which the apparatus showed itself defective, the operation for establishing the prosthetic centre by this method, one may say, constantly revealed that the cause of the bad working of the prosthesis was due to defective hinges, that, on being corrected according to the results obtained from the experiments, resulted in the disappearance of every functional defect.

We would point out that the prosthetic centre so determined is found at a point in which the evils bound up with a single movement are reduced to minimum terms.

We have also sought to find reasons for this result and have naturally prospected hypotheses. It is highly probable that the centre obtained is that which allows the apparatus of the prosthesis to preserve complete solidity with the soft parts of the articulation in all phases of its movement.

For this the physiological displacement of the articular centre of the knee between the components of the skeleton no longer exercises a sensible influence on the functioning of the prosthetic apparatus.

We propose studying this interesting problem profoundly, but meanwhile we feel encouraged by the results obtained to advise orthopædists to experiment with the new technics of measurement.

We believe it will not be out of place to resume briefly the series of reliefs that the technical mechanic will have to obtain each time he has to execute an apparatus of prosthesis for a mutilated leg, protector or orthopædic apparatus articulated at the knee: firstly he will obtain them from a healthy limb and then from an injured leg.

The first time he will draw the contours of the limb as seen in perspective, marking the principal points of departure, viz., the malleola (ankle), the head of the femur, the interlinear articulation and the great trochanter.

It is advisable, especially in limbs that are very muscular, that the pencil should press firmly for the whole of the contour of the extremity so that the inequalities of the skeleton shall be

clearly in evidence (peroneal head, femoral and tibial condyles, great trochanters).

On the second trial the circumference of the articulation taken at different levels will be noted, and finally the profile of the limb in flexion will be drawn, from which useful data will be deduced for the construction of the apparatus, particularly the exact height from the anterior margin of the thigh to the point of the foot.

We trust that technical experts in orthopædia will experiment with the technics proposed by us and that our results will receive authoritative confirmation from the results obtained by them.

Milan, 15th April, 1918.

MILITARY ORTHOPÆDIC SURGERY: ITS SCOPE AND AIMS.

By COLONEL SIR ROBERT JONES, C.B.

I have been requested to state briefly the way in which we deal in this country with the group of cases which we classify under the term "Military Orthopædics." Both at home and in America the definition practically covers the surgery of the extremities. The Army Council Instruction includes under the term "Orthopædic" ankylosis of joints, deformities and disabilities of the feet, malunited and ununited fractures, injuries to the peripheral nerves, and conditions requiring the transplantation of tendons. This represents a very large proportion of the injuries of war, so that constant effort is being made to increase our accommodation which is at present inadequate. We opened our first Orthopædic Hospital in Liverpool in 1915 with 250 beds, and now we have Centres scattered over Great Britain and Ireland with well over 20,000 beds.

In organising an Orthopædic Centre we decide to have every department represented, and that these departments should bear such a relationship to one another that while they interdigitated they should not overlap. Our experience of uncontrolled special departments led us to conclude that they were lacking in a sense of proportion, and that cases were being bathed, massaged or electrified which required fundamentally different treatment. Unless these special departments are guided by men with an orthopædic training they might as well not exist. In one institution which we visited we found several men being massaged who should have had their torn nerves sutured. There were others being electrified who required preliminary tenotomies, while others, the subjects of arthritis, were undergoing harmful movements on Zander machines. Again, attempts were being made to break down old septic joints which required the gentlest care. From all the evidence it was clear that special departments should be controlled by well-trained surgeons, and remain in association with Orthopædic Centres.

An Orthopædic Staff will consist of neurologists, operating surgeons and their assistants, and the chiefs of departments. Consultations are encouraged and take place between the chiefs of the various sections, and the powers and limitations of each department is soon appreciated. The co-operation between the departments is of the most friendly character, and the chief of massage is in constant touch with the chiefs of electrotherapy, hydrotherapy and curative workshops.

The departments for treatment consist of:—

- (a) Curative workshops.
- (b) Gymnasium.
- (c) Massage.
- (d) Electrical treatment.
- (e) Baths.

Perhaps the most interesting development is the curative workshops. Obviously a very large proportion of the inmates of an Orthopædic Centre are of a chronic type. Many of them have passed through various hospitals and have undergone several operations. Their moral fibre has been weakened by prolonged strain, and they have lived a life of painful indolence for many months. To such men occupation is essential to their recovery, and the curative workshop has been to them a priceless therapeutic boon. For the initiation and organisation of these workshops the nation is deeply indebted to King Manuel, assisted by the princely generosity of the British Red Cross. These shops have a double curative value—the psychological and the mechanical. As soon as a derelict finds himself once again a productive agent he becomes transfigured. Hope replaces despair, and we find this mental reaction soon produces its physical changes. Although the Commanding Officer has the power to order a man to work, he practically never exercises it, for we find in practice that we obtain our ends more effectively by persuasion and example. Work is therefore very popular and is in addition accompanied by rewards and privileges. The mechanical therapy is of two kinds—direct and indirect. A man with a stiff foot which he is disinclined to use may be given a job to do with his hands. In the interest which the work inspires he forgets to nurse his foot, which almost unconsciously and often very rapidly becomes again mobile. A knee joint which could not bear the continued strain of working a treadle will, perhaps, improve in function quickly, while the patient, forgetful of his injury, is working with a saw. This is the *indirect* method of attack. The *direct* is invoked when we give a man with a stiff shoulder, paper-hanging or whitewashing, in order to loosen it; or screwdriving to pronate or supinate his arm, or a plane to mobilise his wrist. The governing principle in regard to curative work is founded on the well-grounded belief that active movements which mean voluntary movements are of infinitely greater value than passive movements which mean those imposed from without. Active movements by exercise in one of its various forms has a direct curative effect upon the muscular structure. Passive movements are sometimes essential in order to stretch or flex a joint in preparation for active exercise, but in war injuries such movements must be closely supervised by an experienced mind. Work in the gymnasium is rendered attractive by the introduction of games carefully devised for definite objects. If these games are competitive they often prove most helpful to the functional element so often grafted upon the organic. Although associated regional types of disability are grouped in classes we depend mostly upon individual attention. A good instructor

has a hundred eyes, can detect and watch men with special disability and he always knows the danger of over-exercise.

Massage and electro-therapy are governed by well-considered surgical principles, both in regard to the types of graduated contractions induced in order to simulate normal physiological action and the maintenance of uninterrupted relaxation in paresed muscles. We lay it down as a fundamental principle that muscles must not be massaged while they are under tension. In drop wrist, not for one moment is a patient allowed to palmar flex his wrist—it must be kept dorsi-flexed while either being massaged or while undergoing electric treatment. In all the centres we have artists and modellers, and careful pictorial records are kept of the various types of deformities. We may have the pleasure of showing you around the Orthopædic Centre at Shepherd's Bush while you are in London. It is typical of some 15 or 20 institutions run on similar lines and placed in large industrial centres over Great Britain and Ireland. Around each of these centres is grouped a series of auxiliary hospitals supervised by the parent staff. It is desired to make these institutions educational, in order to disseminate orthopædic knowledge among men who will have to deal with after-war problems. Intensive instruction is being given at Shepherd's Bush, Liverpool and Leeds, and in three months a well-trained young surgeon will have thoroughly grasped the fundamental principles of orthopædic surgery. We have been immensely indebted to the United States, who, as soon as they entered the war, sent over my friend Major Goldthwait and 23 extremely well-trained orthopædic surgeons. This is a delightful gift for the duration of the war. In addition to these, we have placed at our disposal from the same source 50 American surgeons of junior rank, who can both help us in our work and, at the same time, undergo a training. Even yet—such has been the demand upon our young men—we have very few Britishers undergoing training. This is most unfortunate! A young surgeon would be so much more useful and adaptable at the front if he had undergone an intensive training for three months.

For educational purposes congresses are held twice a year, when the staffs from all the hospitals meet to discuss and relate experiences; while every three months visits are arranged between centres geographically convenient in order that they may link up in efficiency. The operative work done in these centres consist largely in rectifying the deformities of war. Arthrodeses of joints in good functional positions when they are ankylosed in bad ones; bone grafting and other reconstructive measures for bony deficiencies and non-union; lengthening of shortened limbs and re-adjustment of malunited fractures; the fixation of flail joints in good functional position, and tendon transplantation for various conditions.

We have included injuries of the peripheral nerves in our orthopædic list because they often require pre-operative, operative and post-operative treatment, and they were the type of

case which at the beginning of the war were found to be neglected owing to the pressure on beds. Such cases are most carefully examined by neurologists who work in close conjunction with the surgeon. In this way the nerve cases are under admirable control, and we endeavour more and more to segregate the cases requiring suturing under the care of those men who do the work best. A feature of the neurological work is the success which has attended tendon transplantation in irreparable damage to the musculospiral and post-interosseous nerves.

Distinguished *general* surgeons overlook the work of each of the centres.

There has been a very natural anxiety on the part of the War Office at the prolonged retention of men at the Orthopædic Centres; but when the other side of the picture is presented, and it is realised that over 70 per cent. of the cases are returned to military life, it is evident that the patient care which has been devoted to them is justified. The Orthopædic Hospital is the only link which makes it possible for the Pensions Ministry to make a useful citizen of a disabled soldier. The regret we must all feel is that so many of the deformities which we have to rectify might be avoided were surgeons more generally instructed in mechanical principles.

More recently—to expedite the process of cure, to diminish the time of hospital treatment, and to prevent the formation of these chronic disabilities—steps have been taken to bring suitable cases from overseas direct to the Orthopædic Hospitals. They are labelled “Orthopædic” and taken in convoys direct to the centres. The stay in hospital is in this way much diminished, as the facilities and equipment are such as to ensure that the best thing shall be done, and at once.

Another useful method of improving treatment is that of propaganda. Command Dépôts are visited monthly by orthopædic surgeons, and the doubtful cases are discussed in groups. Instructions or suggestions are sent to the various hospitals all over the country dealing with preventive methods. The following suggestions, drawn up by the consultants and sent round to all the hospitals in the country, may be useful as an indication of what is being done:—

(a) *Gunshot injuries through the joints followed by suppuration, generally result in ankylosis.*

The position of greatest usefulness in such conditions are:—

Shoulder.—The arm should be kept abducted to about 50 degrees. The elbow should be slightly in front of the coronal plane of the body, so that when it is at right angles, and the forearm supinated, the palm of the hand is towards the face. The arm is placed in this position, while the scapula retains its normal position of rest. The humerus being fixed to the scapula at the angle indicated, the arm can be lifted to a considerable height by scapular action.

The arm should not be kept more abducted than 50 degrees, otherwise scapular action will not allow it to be brought to the side.

Under no circumstances should the joint be allowed to ankylose while the arm lies hanging down, for the functional result will be so bad as to necessitate an osteotomy later on to correct the adduction.

Elbow.—The position must always be influenced by the patient's calling, but in the majority of cases the best functional results are obtained when the angle between the humerus and the forearm is a little greater than a right angle, *i.e.*, about 110 degrees. The forearm should be supinated so that that palm is directed slightly upwards. If both elbows are ankylosed, one should be about 110 degrees and the other 70 degrees.

Wrist.—All injuries of the wrist joint should be treated with the wrist slightly dorsi-flexed, with the fingers spread well out (*see* paragraph "e" later). There should be no exception to this rule.

Hip Joint.—Ankylosis should be secured in the position of slight abduction, the thigh extended and slightly rotated outwards.

Knee.—It should be fully extended, care being taken to avoid hyper-extension.

Ankle.—The foot should be kept at right angles to the leg, in a very slight varus position. A valgoid position of foot is to be specially avoided.

(b) *Gunshot injuries of joints followed by rapid healing.*

During the period of rest, these joints should be kept in the same position as indicated above. If there is no considerable damage to joint surfaces, movement may be expected in many of these cases if ample time is given for recovery from inflammatory change. Any attempt at breaking down such cases under an anæsthetic is to be deprecated. Such joints require very careful handling. The shoulder will serve as an instance. Without removing the shoulder abduction splints, the joint should be well massaged for a few days. If there is no reaction, it is safe to remove the arm a few degrees from the splint and let it down again. If this is not followed by reaction, it may be repeated every day, and the patient encouraged to lift it actively from the splint. When he can do this easily, the splint can be bent a few degrees (adducted) so that further movements can be practised.

Massage and electric stimulation of the deltoid are indicated. The principle is one of alternative attack and rest. If reaction occurs a further rest of the joint is needed. A similar principle of treatment applies in similar injuries of other joints.

(c) *Injuries involving tissues in the neighbourhood of joints, resulting in suppuration, deep scarring, &c.*

No attempt should be made to break down these cases under an anæsthetic. The knee-joint will serve as an example. When by massage and other tests there is reason to expect no inflammatory reaction, graduated movement may be attempted. If the knee is straight with, say, 10 degrees of movements, a splint is moulded allowing the joint to flex to 25 degrees. The limb is bandaged to the splint. When the joint has yielded so that the limb lies easily on the splint, it should remain in that position for recovery of the strained tissues to occur. Movements are then practised by the patient within the range of 25 degrees. If voluntary movement is free within that range, a greater angle is given to the splint and treatment is repeated. If the joint becomes tender and stiffens in the new position, it must be placed back in the straight position and rested. When movement has been secured to about 45 degrees, active and passive movements may be continued in the gymnasium. In all extra-articular lesions of the axilla and its folds, where ankylosis of the joint is not expected, the arm should be placed in the fully abducted position.

(d) *Injuries occurring at a distance from the joints, fractures, &c., with inflammatory changes occurring in the muscles.*

No joint, not the seat of an arthritis, should ever be allowed to stiffen permanently.

In all fracture cases where it is possible to move the joint, without interfering with the fixation of the fragments, this movement should be practised. One gentle movement in each direction once in two days is sufficient. Passive movements, which involve frequent repetition of the same movement, are unnecessary, and often harmful. If the joint is very stiff after prolonged immobilisation, and where the bone is supposed to have united, great care is required. The bones above and below the joint should be well splinted while movement is started—if necessary under full anæsthesia. Unless the joint yields readily, the surgeon should be content with a few degrees of movement, the joint should be secured for a few days, and the surgeon may renew his efforts from time to time. Bone is soft for many months after a gunshot injury, and many fractures have occurred again as the result of attempting to move the joint without first protecting the bone from strain. This is especially true of fractures above the knee and near the shoulder joint.

(e) *Stiff fingers.*

All splints for dorsiflexion of the wrist, especially where fractures or inflammatory changes have occurred in metacarpals and phalanges, should be moulded in the position the hand takes when holding a cricket ball. Particular care should be taken not to over-extend the metacarpophalangeal range, as stiffening in this position is most intractable. The palmar arch should be maintained concave, the short dorsi-flexion splint should leave

ample room for movement in the metacarpophalangeal range, and should be moulded to allow of adduction of the thumb. At the earliest possible moment active movements should be encouraged, and massage and passive movements should be gently practised. The so-called "breaking down the fingers," followed by swelling from effusion, retards recovery. The movements should be very gentle to be effective.

GENERAL REMARKS.

In all cases where the injury does not directly involve the joint, massage and active movements should be encouraged. Even when a joint has to be fixed in consequence of a fracture in the neighbourhood, early massage and electric stimulation is needed in order to prevent adhesions forming in the muscle sheaths. The patient should also be taught how to contract his muscles while the limb is splinted.

Splints should not be applied to the fingers except where they are the actual seat of fracture or active inflammatory changes.

In all fractures of the forearm, the hand should be supinated.

All splints should be removed from the upper extremity at the earliest practicable moment. As bones take a very long time to harden, the lower limbs, inasmuch as they have to bear body-weight, should be guarded against deformity during walking. Neglect of this precaution has given rise to many cases of bowing and overlapping of the femora. All gunshot injuries of the joints have to be treated with great gentleness, and the breaking down of such cases under an anæsthetic is to be generally avoided. Our pre-war experiences are not applicable to the gunshot injuries which present themselves.

All scars about joints should be kept extended during healing unless a contra-indication exists. Care should be taken to prevent equinus at the ankle taking place during the treatment of other lesions of the limb. As patients have to be discharged while still under treatment, it is imperative that full instructions should be given to the local Pensions Committee as to the further treatment that is needed.

These instructions give the various surgeons—many of whom have not had an Orthopædic training—fundamental principles upon which they can act.

All the artificial limbs in the country were made first of all at Roehampton House in London. This hospital, though not included in the Orthopædic scheme, is staffed by Orthopædic surgeons. It was soon found necessary to decentralise, and limbless hospitals were started in Scotland, two in Ireland and one in Wales. Quite recently it has been decided to start fresh Centres in direct connection with the Orthopædic Centres at Liverpool, Leeds, Manchester and Birmingham. Three of these have already started work. They are under the joint control of the War Office and the Pensions Ministry. The patient remains in the Army until his artificial limb is fitted.

But the Curative workshops can be utilised in an invaluable way by the facility with which they can turn out *provisional limbs* of a cheap but effective pattern, by means of which the soldier can be provided with a method of locomotion as soon as he can bear his weight on the stump. He can very soon discard his crutches and move about with a stick.

A further boon has been conceded. He can go to his home on furlough with this provisional limb until such time as he is required to enter the "Limbless" Hospital for the adjustment of the permanent artificial leg.

Such are the means adopted to restore function, and render the patient fit to return to the Army or to go back to civil life.

If sufficiently restored the patient may go to a Command Dépôt for further training, or be remitted direct to his unit, and become again a serving soldier.

If he is so disabled as to be unfit for further service, he is discharged from the Army and becomes a pensioner—coming under the supervision of the Pensions Ministry.

The discharged soldier, now a pensioner, may be able to go back to his old trade, or he may find a new job in which he may be employed without further training; or he may be re-educated for another trade or craft. Arrangements are being made by means of classes in the technical schools, through private employers, or by the establishment of new institutions, in which he can get both training and treatment.

Many of the Orthopædic pensioners require very prolonged treatment, necessitating close observation for a considerable time, combined with massage and electrical treatment, etc.

For this purpose numerous out-patient clinics are required and set up. One paramount consideration should be kept steadily in view by the Ministry of Pensions in this connexion. Any provision for the treatment of the Orthopædic pensioner must be made so as to allow of adequate supervision, control and inspection by an orthopædic surgeon. Continuity of treatment is lost otherwise, and the patient, careful work of months may be undone.

The complete organisation in relation to the treatment and training of the pensioner should include:—

1. An out-patient clinic, with massage and electrical installation.
2. Beds for in-patients.
Both these to be inspected and supervised through the nearest Orthopædic Centre.
3. Hostels.
4. Means of re-education.

Military Orthopædic Centres exist now in all the Commands. In the Scottish Command there are three—at Aberdeen, Glasgow and Edinburgh. At all three, and at Dundee as well, arrangements have been or are being made for the correlated treatment and training of the Orthopædic pensioner.

In the Irish Command there are two Orthopædic Centres—at Belfast and Dublin.

In Wales, the Welsh Metropolitan War Hospital, Whitchurch, near Cardiff, is the main Orthopædic Centre. A second one is in the process of being established at Newport, Mon. Arrangements are now being made at Cardiff to co-ordinate the treatment of the Orthopædic pensioner with the military Orthopædic Centre at Whitchurch.

In England there are two Orthopædic Centres in the Northern Command—at Newcastle-on-Tyne and at Leeds. In both the pensioner is to be dealt with by association of his treatment with the organisation of the Military Orthopædic Centre.

In the Western Command (in which Wales is included) there are in addition, Centres at Liverpool and Manchester. In the Eastern Command a Military Orthopædic Centre is being organised at the Military Hospital at Edmonton.

In the Southern Command, Centres exist at Birmingham, Netley, Oxford, Reading and Bristol; and in the London area there are Shepherd's Bush and Tooting Military Orthopædic Hospitals.

For the orthopædic pensioner it is necessary that all schemes of treatment shall be closely allied to these Military Orthopædic Hospitals, so as to be able to take advantage primarily of the special knowledge and training of the staffs of these institutions, and when it is possible to make use of the establishments themselves. The pensions beds must be either at or closely proximate to the Orthopædic Centre, as it is impossible to re-duplicate staffs.

Many more subordinate clinics are needed however in towns where recognised Orthopædic Centres do not exist. Such institutions should be affiliated to the nearest Orthopædic Centres in the several Commands. As each Command possesses at least one Military Orthopædic Hospital, these subordinate clinics should be set up by the Ministry of Pensions, after consultation with the War Office, and each should be periodically inspected by skilled orthopædic surgeons.

Such arrangements must be made if continuity of treatment is to be maintained and the pensioner is to be restored to health. The staffs for the pensioners' clinics should undergo an intensive training at an Orthopædic Centre.

Such are the scope and aims of military orthopædic surgery. Arising out of principles adopted for the treatment of crippled children, it has expanded into a huge organisation of extreme military importance—first, with the object of receiving the serving soldier and sending him back to the fighting line; and, second, to reconstruct and restore the functions of those so badly crippled as to be useless as fighting units but who, if properly treated, may take their places as useful workers and efficient members of organised society.

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